THINKING CREATICALLY

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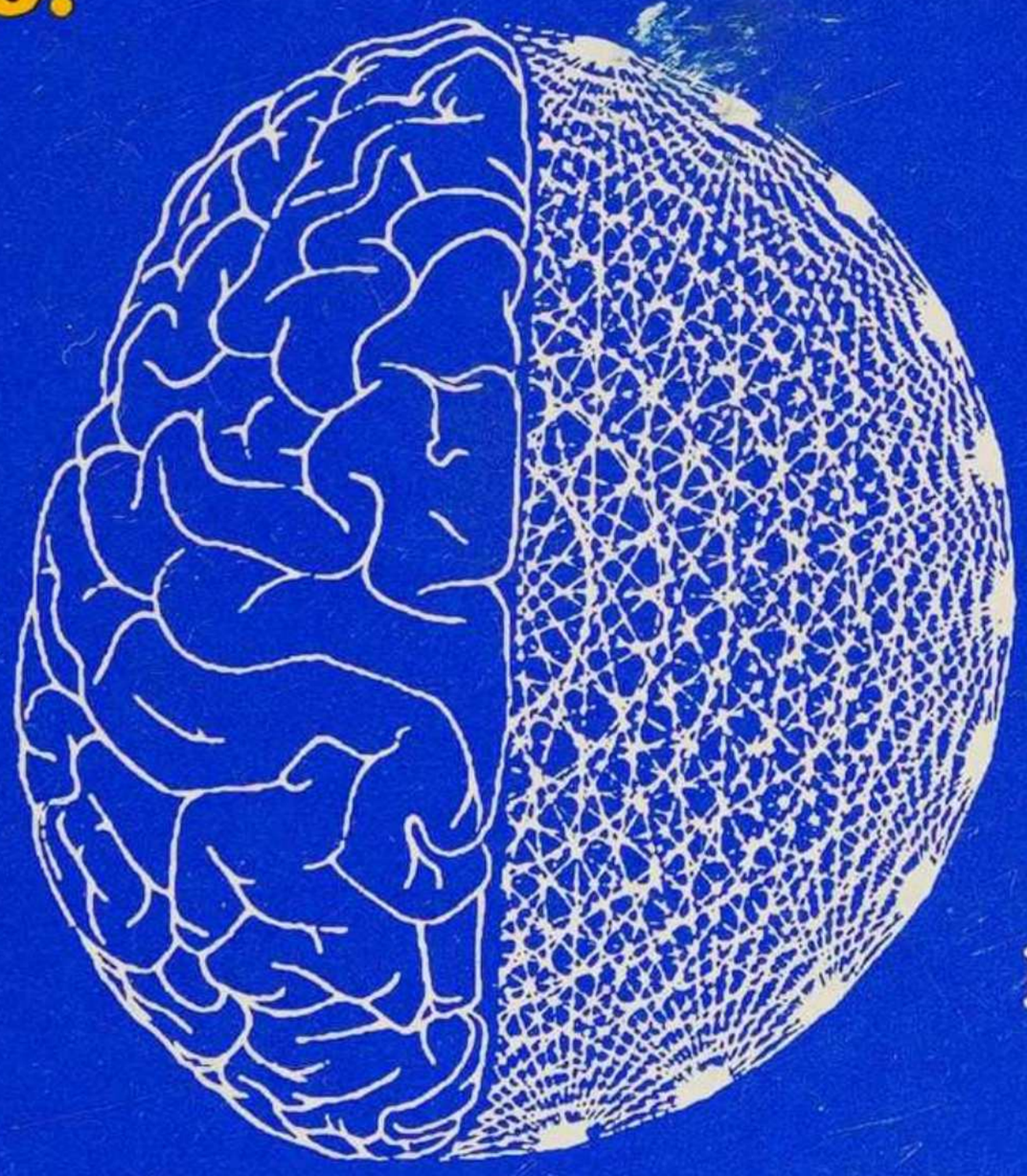
Edited by
Kenneth G.
Johnson



Foreword by
Steve
Allen

Institute of General Semantics

THINKING CREATICALLY

A Systematic, Interdisciplinary Approach to Creative-Critical Thinking

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Thinking Creātically
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To the memory of
William Exton, Jr., President
Institute of General Semantics
1983-1988

To My Grandchildren
Erica and Kurt
The Next Generation of Time-Binders

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FOREWORD

STEVE ALLEN

About 1960, I began receiving letters congratulating me on being a general semanticist. Since I had no idea what a general semanticist was, I began some casual reading in the field by consulting the works of Alfred Korzybski, S.I. Hayakawa, and others.

Ken Johnson recently reminded me that in 1961, at a general semantics seminar, I observed that although I was a newcomer to such company I had an odd sense of being at home in it. The reason was that, without ever having consciously thought the matter through, I had accidently stumbled over a few modest sand-grains of the sort that constitute the great edifice of general semantics thought.

To be specific, at quite a early age it occurred to me that no two things on earth were identical. Possibly this insight flowed out of having been told that no two snowflakes were ever the same. In any event it was clear to the senses that no two physical objects I had ever encountered were truly identical. Even those objects formally modified by the adjective *identical* — such as identical twins or identical machine parts — were, if inspected closely, not really so.

Also some experience, much of it frustrating, with members of my mother's family, among whom I was reared, had dramatized the sharp contrast between even half-way clear thinking on the one hand and emotion-laden, disorganized, biased and narrow-minded thought on the other.

None of this is remarkable or perceptive enough to have shaken the foundations of the reputations of Aristotle, Aquinas, or Santayana but it was nevertheless such modest first steps that turned out to harmonize smoothly with the more formalized arguments constructed by Alfred Korzybski and his followers.

Another aspect of personal experience which forced me to perceive certain aspects of inadequate thinking, at least on the part of others,

came about simply because I know more about myself than other people do and consequently recognize errors in certain of their observations about me, even in instances where such comments were highly complimentary.

A good part of this involved nothing more than identifying the good old Unwarranted Assumption. To construct an example to illustrate the point, consider a sentence that starts, "As a Catholic, Allen naturally feels that...."

Although I was a member of the Catholic church for the first three decades of life, I was automatically excommunicated at the moment of my second marriage. Any such inference about my conduct or beliefs after that date, therefore, would stand a good chance of incorporating error.

Mistakes in reporting both my activities and views have been so common over the years, even in articles written by fervent admirers, that I have accumulated an enormous number of them. While this is only a secondary rather than primary application to general semantics, it is nevertheless important to be aware that unless I am the only public figure about whom so much error is transmitted, we must always maintain a degree of skepticism about supposedly factual reporting on any personage, institution or event.

Over the years I collected hundreds of experiences, personal testimonials, clippings of news stories, reports of polls and statistical studies that convinced me that American people are suffering from a new and perhaps unprecedented form of mental incapacitation for which I have coined the word *dumbth.*

I certainly was not the first to notice the disastrous state of intelligence in America. But my frustration with incompetence and inefficiency and my concern about the growing problem of ignorance and stupidity led me to write *"Dumbth" And 81 Ways to Make Americans Smarter* (Prometheus Books, Buffalo, NY, 1989). More than I realized at the time, general semantic principles were woven

into several of my "Rules" for improving the thinking process. (Rule 81, incidently, suggests "Become familiar with the general semantics movement.")

Part of the problem is that we think very poorly. But how could it be otherwise when few of us have given any instruction in that difficult task? Do schools teach us *how* to think? Very rarely. They teach us *what* to think.

It's odd that at a time when 'consciousness raising' is at least relatively popular, thinking itself has relatively few defenders, even though it is one of the chief means of raising one's consciousness.

When people use that now-common phrase, they usually refer to consciousness about specific issues — abortion, civil rights, women's rights, environmental pollution, and so on. But simply to learn seventeen new facts about these important social questions is hardly an adequate method of achieving the desired end. It is necessary to *think* about such issues, intelligently speculate about them, reason about them, communicate articulately about them.

What we desperately need now — as individuals and as a society — is instruction in *how to think*.

I shall never forget the literal thrill I felt some years ago at witnessing a demonstration by a group of children aged 12 or 13 all of whom had benefitted by instruction in general semantics by Catherine Minteer. Each child first read aloud a newspaper article or advertisement, then analyzed it for the audience. The insight, the clarity, the brilliance with which those children separated hot air from factual, reasonable statements was tremendously exciting. God, if a generation of young Americans could be taught similar lessons, it is difficult to envision the benefits to society that could result.

It is important to realize that general semantics is not simply something of interest to scholars or university graduates. Teachers

can and should introduce it at all levels since thinking skills are useful at every level and in every subject in the curriculum. In one regard general semantics is even superior to the classic disciplines in that in the process of improving communication it encourages more fair and rational behavior toward others.

In this book twenty-four teachers will show you *how* to think creatively and critically. The authors weave a tapestry of observations, suggestions, theories, reflections and teaching methods based on general semantics. They will lead you to other books on general semantics and related approaches to creative and critical thinking. You may want to attend lectures and seminars or subscribe to *Et cetera* magazine (International Society for General Semantics, 965 Mission Street, Suite 330, San Francisco, CA 94103) or the *General Semantics Bulletin* (Institute of General Semantics, 163 Engle Street, Englewood, NJ 07631).

Though Steve Allen is best known for his creative work as a television comedian and host of the "Tonight Show" and the "Steve Allen Show," he has written more than thirty-two books ranging from poetry through short stories, humor, autobiography and politics. His scholarly treatise on migratory farm labor titled *The Ground is Our Table* sold over 25,000 copies. Then there's the musical Allen — composer, lyricist, conductor, singer, recording artist and pianist. Steve has some forty record albums to his credit and has written over 4,000 songs.

Prestigious awards from within and outside the industry have honored his unique PBS television series "Meeting of Minds" which brought back important personages of the past to discuss social and philosophical issues.

His strong social conscience led him to become deeply involved in philosophy, religion, politics and the problems of the underprivileged. He has an almost obsessional hunger for education. "It was suddenly clear to me" he has said, "that as an individual's knowledge increased he becomes more aware that what he knows and all that he can know is a grain of sand compared to the Sahara that can potentially be known." He was disturbed that people could buy a bottle of liquor which would last a few days, but would not buy a book which would last a lifetime. "I buy books," he admitted, "as if they were jelly beans."

PREFACE

Often what passes for logic or critical thinking consists of blindly following the assumptions built into the language. Take a sentence as simple as "Mary is beautiful." One might assume, following the structure of the language, that 'beauty' is a characteristic of 'Mary' — apart from any observer, any human judgment.

Alfred Korzybski, Polish scientist and founder of the field of general semantics, recognized that "a language, any language, has at its bottom certain metaphysics, which ascribe, consciously or unconsciously, some sort of structure to this world... Now these structural assumptions and implications are inside our skins when we accept a language — any language. If unraveled, they become conscious; if not, they remain unconscious." (*Science and Sanity* p. 89)

The very fact that many of these assumptions remain unconscious gives them their power. One can hardly claim to be doing 'critical thinking' when much of the process is buried in hidden assumptions. General semantics focuses on the assumptions underlying symbol systems, with the relation of language to 'reality,' of word to fact, of theory to description, of description to observation, of observation to processes at microscopic and submicroscopic levels.

It takes into account the perceptions, expectations, and previous experiences of the observer. It investigates how we know what we claim to know. It deals with the role of language in critical-creative thinking and in achieving predictability.

By studying and contrasting the language behavior of scientists and of mental patients, Korzybski abstracted significant features of scientific behavior that increase predictability. He found that science and sanity, indeed our very survival, depend on predictability — on having symbolic maps similar in structure to the territory they purport to represent.

> "General semantics is not any 'philosophy,' or 'psychology,' or 'logic,' in the ordinary sense. It is a new extensional discipline which explains and trains us how to use our nervous systems most efficiently.... In brief, it is the formulation of a new non-aristotelian system of orientation which affects every branch of science and life. The separate issues involved are not entirely new; their methodological formulation *as a system* which is workable, teachable and so elementary that it can be applied by children, is entirely new." (*Science and Sanity*, pp. xxvi-xxvii.)

The chapters in this book represent several views of general semantics and its applications. Many were first presented as papers at an International Conference Celebrating the 50th Anniversary of the Founding of the Institute of General Semantics, July 27-31, 1988, at Yale University. I thank the authors for their contributions and their patience in dealing with a sometimes demanding editor. Special thanks go to Marjorie Zelner, Executive Secretary of the Institute of General Semantics, who skillfully, wisely, with hard work and good humor, took edited manuscripts and supervised their conversion into the book you hold in your hands.

K. G. J.

Milwaukee, Wisconsin
August 1990

A NOTE ON QUOTES

Perhaps you have already noticed some quotation marks being used in an unconventional way. Single quotes are sometimes used as extensional devices — as explained in the first two chapters of this book. To accommodate that specialized use to standard quotation practice, I have followed the style adopted by the *General Semantics Bulletin*:

Single Quotes (Extensional Device)

1. To mark off terms and phrases which seem to varying degrees questionable for neuro-linguistic, neuro-physiological, or general epistemological reasons (e.g., 'normal,' 'reality.')

2. To mark off terms used metaphorically, playfully, etc.

    a. 'mind,' 'meaning,' 'space' or 'time' used alone, etc.

    b. "...the semantic reaction formulation could serve as a 'bridge'... between Pavlovian classical conditioning and Skinnerian operant conditioning." (Silverman)

Single Quotes (Standard Usage)

To indicate a quote within a quote.

Double Quotes (Standard Usage)

1. To indicate a term or phrase used by some referred to person but not necessarily indicating a direct quotes. Example: What Korzybski referred to as the "semantic reaction."

2. To indicate a direct quotation from a named source.

If we indoctrinate the young person in an elaborate set of fixed beliefs, we are insuring his early obsolescence. The alternative is to develop skills, attitudes, habits of mind and the kinds of knowledge and understanding that will be instruments of continuous change and growth on the part of the young person. Then we will have fashioned a system that provides for its own continuous renewal....

All too often we are giving our young people cut flowers when we should be teaching them to grow their own plants. We are stuffing their heads with the products of earlier innovations rather than teaching them to innovate....

John Gardner
Self-Renewal

Even on the verbal level, where they are most at home, educators have done a good deal less than they might reasonably have been expected to do in explaining to young people the nature, the limitations, the huge potentialities for evil as well as for good, of the greatest of all human inventions, language.

Children should be taught that words are indispensable but can also be fatal — the only begetters of all civilization, all science, all consistency of high purpose, all angelic goodness, and the only begetters at the same time of all superstition, all collective madness and stupidity, all worse-than-bestial diabolism, all the dismal historical succession of crimes in the name of God, King, Nation, Party, Dogma.

Aldous Huxley
"Education on the Nonverbal Level"

HARNESSING SELF-REFLEXIVENESS FOR CREĀTICAL THINKING

KENNETH G. JOHNSON

A couple of years ago when I presented a seminar on critical thinking sponsored by the Institute of General Semantics at Barnard College, I argued that we should not regard critical and creative thinking as opposites, but as complementary. 'Critical' thinking often involves the *creation* of alternative plans, solutions, approaches, etc., then comparing the original with the alternatives. 'Creative' thinking requires some *critical* evaluation during and after the creative phase. I suggested that we consider 'critical' and 'creative' the yin/yang of the thinking process.

Professor Stuart Mayper, editor of the *General Semantics Bulletin*, attended that seminar. The next morning, while taking a shower, he had an 'Aha!' experience: 'Creātical' — a word to put together two aspects of the thinking process. I want to give my good friend and colleague, Stuart, full credit for his contribution.

Creātical thinking depends upon that little known and seldom discussed characteristic of the human nervous system — self-reflexiveness. Usually it also depends upon that remarkable human creation and tool — self-reflexive language.

Humans not only know about their environment, they know that they know; they can think about how they think, evaluate their evaluations. Languages, too, have this self-reflexive characteristic. They enable us to talk about talk, to make statements about statements, to write books about writing books.

The self-reflexiveness of language and the human nervous system provides us with an open-ended system: we can make statements about statements about statements, indefinitely; we can react to our reactions to our reactions indefinitely. At no point can we say, "That's the last word on the subject" or, "No further reaction is possible" (since, in doing so, we have said more, reacted further).

However, *believing* that we have said the last word may cut off the self-reflexive process.

This open-ended, self-reflexive system makes it possible for us to conduct scientific research, write poetry, plan enterprises, spin out complex tales of fiction — or spread rumors, spin webs of delusion and talk ourselves into insanity or war. Which we will do depends in part upon our motivation, but also upon our understanding of the thinking process and some aspects of the working of the nervous system.

Second-Order Reactions

Let us begin our analysis with second-order reactions that seem the 'same' as the first order; for example, thinking$_2$ about thinking$_1$, or fear$_2$ of fear$_1$. The index numbers (subscripts) indicate that the 'same' words represent different orders of abstraction. Terms used in this way Alfred Korzybski called 'Multi-ordinal.'

> The reader should be warned from the beginning of a very fundamental semantic innovation; namely, of the discovery of the 'multiordinality' of the most important terms we have... Terms like 'yes,' 'no,' 'true,' 'false,' 'fact,' 'reality,' 'cause,' 'effect,' 'agreement,' 'disagreement,' 'proposition,' 'number,' 'relation,' 'order,' 'structure,' 'abstraction,' 'characteristic,' 'love,' 'hate,' 'doubt,' etc. are such that if they can be applied to a statement they can also be applied to a statement about the first statement, and so, ultimately, to all statements, no matter what their order of abstraction is. Terms of such character I call 'multiordinal' terms. The main characteristic of these terms consists of the fact that on different levels or orders of abstractions they may have different meanings, with the result that they have no general meaning; for their meanings are determined solely by the given context, which establishes the different orders of abstractions (1).

Korzybski claimed that some second-order reactions (thinking$_2$ about thinking$_1$, reasoning$_2$ about reasoning$_1$, evaluating$_2$ our evaluations$_1$, etc.) represent healthy uses of self-reflexiveness. Others (worry$_2$ about worry$_1$, fear$_2$ of fear$_1$, belief$_2$ in belief$_1$, etc.) represent morbid semantic reactions. Before the invention of cybernetic terminology, he seemed to distinguish those reactions that involve negative (corrective) internal feedback from those that involve positive (intensifying) feedback. According to O. H. Mowrer,

> If a control system, like a thermostat or the governor on a steam engine, has a stabilizing influence on some quality — heat in one case, speed in the other — then the feedback is said to be negative, regardless of whether it is acting at any given moment to bring a quantity up or down to a standard state. The 'error' in other words, which the control system is trying to 'correct' may be either 'plus' or 'minus,' but the type of over-all control is, in either case, said to involve negative feedback.
>
> The opposite, or positive, type of feedback is no less interesting. The products of certain chemical reactions are such as to have a catalytic effect upon and thus to speed up the reactions which produce them. Sometimes these reactions gain momentum so rapidly as to produce 'explosions' — they are, in fact, the same in principle as the chain reactions in the atom bomb and the H-bomb. If, likewise, certain other types of processes start to slow down, the effects of the retardation accelerate the slowing down. Thus, if a business concern is not prospering, inability to pay employees satisfactory wages or to meet creditors may accelerate the failure (2).

Critical thinking (thinking$_2$ about thinking$_1$) clearly involves *corrective* internal feedback. *Creative* thinking emphasizes *intensifying* internal feedback — one idea seems to build upon another, to have a catalytic effect that sometimes resembles a chain

reaction. But as I hope to show in this chapter, *effective* thinking *integrates* these two aspects of self-reflexiveness. Many of the principles that enhance the critical phase also stimulate the creative phase.

For thirty years I taught a course in General Semantics. I didn't teach 'critical' or 'creative' thinking per se, but I found remarkable changes in my students in these and other aspects of their thinking-evaluating.

General semantics provides a meta-linguistic or 'second-order' approach to creātical thinking. It enables us to use self-reflexiveness *systematically* to monitor on-going evaluations. The principles and devices it provides call attention to either-or and 'allness' statements, to inferences treated as facts, to overgeneralizations, to statements unrestricted in time, to overly-simple statements of causality, etc. The tools work, whatever the order of abstraction, whatever the source of the statement.

People who have a 2 or 3 week 'exposure' to general semantics, perhaps in a speech or English class, frequently find it "interesting, but not very useful." They tend to see general semantics as a fragmented collection of observations and generalizations about language, not as an *integrated system.* Once students see that the bits and pieces form a system, they learn more rapidly, finding meaningful patterns and underlying structures. These larger 'chunks' of knowledge become readily available for use in almost all aspects of their lives.

The chapter by Philip Sabatelli "Critical Thinking as Extensional Orientation" probably best shows general semantics *as a system.* In this chapter, rather than explain general semantic formulations, I would like to show them in action.

General Semantics and the Critical Phase

Near the end of my course in general semantics, I asked my students to apply what they had learned to a single, apparently simple statement, "I am a failure."

I chose that statement because most students could, at least to some degree, identify with that self-image statement.

Self-image provides an excellent example of self-reflexiveness. My self-image not only reflects what I think I 'am,' but directs my expectations of what I can (or cannot) become. I react to my self-image which represents my reactions to me — a cyclic, continuous process — and one well worth examining creātically.

As the students, in groups of 5 or 6, discussed the statement, I asked them to suggest changes, and to do what we came to call a 'Semantic Transformation'(3).

In the following paragraphs I will show, in an abbreviated form, some of the discussion and the resulting transformations. The procedure lends itself to transforming or simply to analyzing editorials, speeches, articles, etc.

(1) "I am a failure."

Most students admitted that, at times, they said something like that to themselves. But notice how absolute that statement seems. No doubts. No uncertainties. And thoroughly demoralizing.

The statement may become a self-fulfilling prophecy. If I really believe I *am* a failure, why should I try? And if I don't try — failure!

You may have spotted the '*Is of identity*' or, in this case, the '*Am of identity*' in that statement. (If not, read the chapter on E-Prime by D. D. Bourland.) It appears to say something about me — apart

from any observer. But look again. It reports *my reactions to me.* So let's transform the statement to include the observer-classifier:

(2) "I consider myself a failure."

Quite a different statement — less dogmatic, less certain. It leaves room for error.

This form of the statement exposes its *self-reflexiveness.* 'I' react to 'me.' I may also react to my reactions. So perhaps I feel depressed because I consider myself a failure; and I may consider myself a failure because I feel depressed. The reactions become self-intensifying, especially if I avoid or neglect corrective feedback.

If a student came to see the late Dr. Irving Lee and said, "I am a failure," Lee would ask, "When?... Were you a failure last year? Going to be a failure next year?" By *dating,* adding the dimension of time, he narrowed the problem and made it more manageable. No longer did it cover "now and forever":

(3) "Right now I consider myself a failure."

English makes it easy for us to talk in extremes, in either-or terms: good-bad, right-wrong, well-sick, unselfish-selfish, alive-dead, etc. It takes more time and effort to talk about anything in between. Often we don't make the effort. Often we don't even consider possibilities in between. What would we find between success and failure? My answer: "Most of us." Note that if I think in either-or terms, it becomes very important to "*be* a success." The only alternative is failure! (For more on this point and its implications, see Wendell Johnson's discussion of IFD disease (4, 5).)

While our language does not provide a convenient in-between, we can get away from the either-or by adding "to some degree."

(4) "Right now I consider myself, to some degree, a failure."

The principle of *non-allness* suggests that we ask, "In *all* respects?" The *process of abstracting* makes it clear that we cannot know *all* about anything, we cannot say *all* about anything. So let us transform the statement again.

(5) "Right now I consider myself, to some degree and in some respects, a failure."

Up to this point we have not attempted to *define* 'success' or 'failure.' But if I pursue 'success' and have not defined for myself what I mean by the term, I can spin my wheels chasing a verbal ghost. How would I know when (if) I achieve it?

Sometimes we define success for ourselves by comparison. Wendell Johnson defined failure as the "*felt* difference between what we expect and what we get" (4). Perhaps we should change the statement to read:

(6) "Right now I consider myself less successful than I would like" or "than my brother Bill."

In a moment I will deal with problems that remain with this statement, but notice the difference in psychological impact between this statement (6) and the one we started with (1). We have gone from a large, dogmatic, now-and-forever, all-inclusive higher order abstraction to a more limited and much more tolerable lower order abstraction.

But let's go one step further. English emphasizes nouns at the expense of verbs. What we '*do*' (verbs) becomes translated into what we '*are*' (nouns). But nouns tend to be categorical, static, either-orish. When we talk about 'success' or 'failure,' these nouns may conceal what we 'do' or 'fail to do.' To make the statement more *operational*:

(7) "Right now I do not do ———————— as well as I would like to."

Whether I do not "play tennis" or "get along with my wife" or "make as much money," or whatever, I have some hint as to what I can *do* about it. If I want to change the situation, then I must *do* something — perhaps change my behavior, perhaps change my evaluations, perhaps change my expectations. At this operational level I can get a handle on it and *do* something about it. At this level I can make observations so I can check my maps against territories.

For instructional purposes, I go from higher-order abstractions to lower orders in a step-wise fashion. Once students internalize the principles, they find it possible to skip steps or jump directly to an operational level.

If we dealt with a real-life situation instead of a classroom example, we could move to still lower orders of abstraction. For example, in what respects do I "not get along with my wife"? What do I expect? What could I change? Etc.

In addition to the general semantic principles I have shown in this analysis, students refer to the extensional orientation, map-territory analogy, evidence, inferences, judgments, scientific method, hidden assumptions, "meanings in people," consciousness of abstracting, levels of abstraction, operational definitions, and several other tools they acquired in the course. See the chapter "Critical Thinking as Extensional Orientation" by Philip Sabatelli for more information on these topics.

Because the example I have used here focused on limitations of language and changes in the wording of the statement, I should point out that general semantics, far from being limited to language, encourages an 'extensional' orientation, a 'check with the territory' orientation. It goes beyond language and logic. To quote Anatol Rapoport,

> "Reasoning by strict logic is something like an accurate reading of a map. It will help us arrive at correct

> conclusions about the territory if the map correctly represents the territory, but not otherwise" (6).

Texts on critical thinking often suggest we begin by stating the problem and describing the situation. OK so far. But we run the risk of focussing our attention on these verbal maps. We may forget these maps *are not* the territory.

Scientists recognize that they cannot solve problems by logic alone. They must check with the territory. Their theories arise from observations and they check them against further observations. Like other scientific methods, general semantics focuses on *questions that can be answered by means of observations that can be made.* The goal: maps similar in structure to the territories they represent, because such maps have prediction value.

General Semantics and the Creative Phase

'Creative' processes do not lend themselves so neatly to orderly treatment, but I would like to discuss some of the ways general semantics can contribute to this aspect of *creātical thinking.* Perhaps most important, general semantics encourages flexibility, open-mindedness, freedom from rigid categories and stereotypes.

Once we realize that each person perceives the world somewhat differently, we begin to recognize our inherent creativity. We create our models of the world with our unique nervous systems abstracting from our unique environments. Perhaps those we point to as 'creative' resist 'buying into' the models of others or the models built into the structure of our language. Perhaps, too, they exercise *consciousness of abstracting* — awareness that people perceive the world in many ways and no one can see 'all' or say 'all' about anything. The extensional device *etc.* serves as a reminder.

Labels, categories, and class terms emphasize similarities among people, places, things, events, etc., even though the items

categorized are not identical. The extensional device called *indexing* reminds us of the differences: $student_1$ is not $student_2$, $teacher_1$ is not $teacher_2$, $painting_1$ is not $painting_2$, $Russian_1$ is not $Russian_2$. Wendell Johnson wrote:

> Once we begin to look for differences instead of similarities, it is practically impossible... not to get new ideas. For the habit of asking "How do these things differ?" or "How might this be different?" is one of the basic techniques of originality or creativeness (4).

Carl Rogers goes one step further:

> The creative person, instead of perceiving in predetermined categories ('trees are green,' 'college education is a good thing,' 'modern art is silly') is aware of this existential moment as it is, and therefore he is alive to experiences that fall outside the usual categories ('in this light this tree is lavender,' 'this college education is damaging,' 'this modern sculpture has a powerful effect on me'.)
>
> The creative person is in this way open to his own experiences. It means a lack of rigidity and the permeability of boundaries in concepts, beliefs, perceptions and hypotheses. It means a tolerance for ambiguity where ambiguity exists. It means the ability to receive much conflicting information without forcing closure upon the situation. It means what the general semanticist calls the 'extensional orientation' (8).

Abraham Maslow in "Creativity in Self-Actualizing People" wrote:

> These people can see the fresh, the raw, the concrete, the ideographic, as well as the generic, the abstract, the rubricized, the categorized, and the classified. Consequently, they live far more in the real world of nature than in the verbalized world of concepts, abstractions, expectations, beliefs, and stereotypes that most people

> confuse with the real world. This is well expressed in Roger's phrase 'openness to experience' (9).

Dating reminds us of the dynamic character of the process universe, including our own organisms. Change goes on around us and within us. Only our own rigidities (reinforced, perhaps by a static, categorical language) keep us from seeing anew, creating anew, interpreting our world anew.

Take a moment to try this little 'test': I will give you a word. Write the word, its opposite, then a word in between. Ready? *wise... selfish... sick... ambitious... alive.* You probably discovered that our language makes it easy to talk about extremes; it takes much more effort (and creativity) to talk (and think) about the in-betweens. No wonder arguments, political speeches, and attempts at problem-solving often become polarized and paralyzed. General semantics promotes *multi-valued orientation* — a way of thinking in terms of degrees, probabilities, continua.

Even the word 'creativity' sometimes leads to either-or thinking. Some argue (or act as if) "either you have it or you don't." To inject some critical thinking, I suggest you run the self-image statement, "I am not creative," through a semantic transformation. Clearly our assumptions about ourselves and about 'creativity' can enhance or cripple our efforts to create.

We seldom realize that every use of language involves, to some degree, creativity. As you read a novel, you *create* meanings from black marks on white paper, drawing upon your experience with words and the world around you. Words don't mean, people mean. You probably don't question the creativity of the novelist, but did you ever think how much creativity you must exercise to read that novel? The novelist wrote a script; you produced the 'movie' in your head. All communication, except perhaps the most stereotyped, all attempts to understand the world involve creativity. You can't *not* create; your survival depends on it. But learning new ways of thinking can lead to a more creative life.

Sometimes language blocks our creativity because we accept the world as 'chopped up' by our language. We may act as if 'thinking' exists apart from 'feeling,' that 'creative' has nothing to do with 'critical' thinking. Robert Pula in "Extensional Devices in Release of Creativity" wrote:

> *Elementalism* in general semantics refers to that well established human penchant for verbally splitting what cannot be split at non-verbal levels. Some examples and their correctives are: mind and body (mind-body), space and time (space-time), form and function (form-function, i.e., *structure*), emotion and intellect (semantic reaction, psycho-logical responses), inside and outside (inside-outside), me and not-me (me-not-me) etc. (The extensional device here is the *hyphen*, which 'rejoins' what has been 'separated') (10,11).

When we look for *the* cause, *the* cure, *the* reason, assuming just one cause, cure, reason, etc., we have fallen into another elementalistic trap that may inhibit *creātical* thinking. Far better to think in terms of *plurals* — causes, cures, reasons, etc.

You undoubtedly have noticed an extensive use of *single quotes* in this chapter. General semanticists use them as a warning device: this term may be elementalistic, misleading, loaded, not used as you would use it. Sometimes it serves as shorthand for 'so-called.' In any case, think twice as you read it.

Korzybski claimed

> There is a tremendous difference between 'thinking' in verbal terms and 'contemplating,' inwardly silent, on non-verbal levels, and then searching for the proper structure of language to fit the supposedly discovered structure of the silent processes that modern science tries to find. If we 'think' verbally, we act as biased observers and project onto the silent levels the structure of the language

> we use, so remaining in our rut of old orientations which make keen, unbiased observations ('perceptions'?) and creative work well-nigh impossible. In contrast, when we 'think' without words, or in pictures or visualizations (which involve structure and, therefore, relations), we may discover new aspects and relations on silent levels, and so may formulate important theoretical results in the general search for a similarity of structure between the two levels, silent and verbal. Practically all important advances are made in that way (7).

I mentioned earlier that general semantics provides a meta-linguistic or 'second order' approach to *creātical* thinking, using self-reflexiveness systematically. To examine premises or assumptions at one level of abstraction one must move to the next higher level. Effective use of self-reflexiveness might therefore involve asking, "What premises or assumptions have I taken for granted, failed to challenge?" This would enable one to move from 'first-order' change to 'second-order' change, using what Watzlawick, Weakland and Fisch call "The Gentle Art of Reframing" (12).

With first-order change, we accept certain premises, certain assumptions, as 'given' and try to work within that system. Second-order change involves challenging and going beyond the limits imposed by those assumptions. Watzlawick (12) provides fascinating examples of the creative use of reframing in problem-solving, including Tom Sawyer reframing the drudgery of whitewashing a fence into a pleasure for which his friends must pay. If research relating general semantics to creative and critical thinking interests you, see references 13-19.

As you read this book, I hope you will read it *creātically*, self-reflexively, taking time to inject your corrective feedback, to spin off your intensifying feedback. Create your own insights, building on those we have found valuable in our personal and professional lives.

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Man is thus his own greatest mystery.... He comprehends but little of his organic processes and even less of his unique capacity to perceive the world about him, to reason, and to dream. Least of all does he understand his noblest and most mysterious faculty: the ability to transcend himself and perceive himself in the act of perception.

Lincoln Barnett
The Universe and Dr. Einstein

CRITICAL THINKING AS EXTENSIONAL ORIENTATION: A GENERAL SEMANTICS PERSPECTIVE

PHILIP SABATELLI

Overview

Recent media coverage of America's educational system has called attention to sagging test scores, inadequate student preparation in reading, writing, speaking, and math, poor attitudes toward work, and the inability to solve problems of a general nature. Whatever the reasons, it is clear that students are leaving the nation's high schools and colleges (in some cases) ill-equipped to take on the responsibilities attendant to graduation.

While business people seeking to hire the recent graduate are among the first to encounter large numbers of unskilled job applicants, they are the 'last stop' for those who somehow missed the point of their education. Whatever the reasons, students today lack thinking skills. Critical thinking skills.

Today's adults are often heard to remark that their best teachers were those who "made them think." What did those teachers do to make their students think? What kind of thinking did those teachers expect from their students?

Critical thinking. Reflective, analytical, incisive thinking. Thinking aimed at sound decision-making. Thinking marked by the presence of certain time-honored techniques of effective discourse: premises or assertions, evidence, analysis, argument, reasoning, proof, and conclusion. Thinking characterized by the rigor of the deliberative process. Those teachers of days gone by may not have talked about their mission in these terms, but this is precisely what they had in mind.

There is much talk nowadays about a return to basics in the classroom. We can expect to see a revival of interest in the concept

of critical thinking, as this work itself attests. As business people increasingly press our educational institutions for significant reform, we will hear more and more about the need for schools to teach students how to think — once again.

Defining Our Terms

What is meant by the term critical thinking? The term has long been used to refer to a set of abilities involving both concrete and abstract linguistic processes. One of the earliest references to the study of critical thinking may be found in the Watson-Glaser Critical Thinking Appraisal, first published in 1942. The five-part paper-and-pencil test deals with inference, recognition of assumptions, deduction, interpretation, and evaluation of arguments. Readers interested in the developmental aspects of these abilities are directed to Piaget's classic studies of cognitive processes (sensory-motor stage, preoperational stage, concrete operation stage, formal operations stage) in children.

Despite the apparent long-term interest in the parameters of critical thinking skills, it is interesting to note the absence of the term in dictionaries of psychological constructs. "Cognition" (*Encyclopedia of Psychology*, 1984) and "thinking" (*Baker Encyclopedia of Psychology*, 1985) (but not critical thinking) seem to be the terms of choice. While both works address definitional matters of cognitive processes and ways of knowing, neither provides succinct treatment of critical thinking as a psychological or educational construct.

Any conceptual definition of critical thinking skills should most certainly include the following:

(a) the ability to draw conclusions from a set of premises;
(b) the ability to establish relationships (casual, correlational) among sequential elements;
(c) the ability to reason inductively and deductively;

(d) the ability to differentiate among factual, inferential, and theoretical statements;
(e) the ability to collect, analyze, and interpret data of several types;
(f) the ability to determine the implications of a set of statements;
(g) the ability to decide upon a course of action from a set of 'known' details; and
(h) the ability to reason qualitatively and quantitatively to solve problems.

Such skills are crucial if today's students are to learn how to organize and cope with the changing technological world around them.

This list is by no means exhaustive and in fact will require certain key additions following a discussion of some assumptions about the role that language plays in the evolution of critical thinking abilities. The primary method by which a student demonstrates cognitive abilities is through some linguistic medium (speaking, reading, writing.) It may be said, therefore, that to demonstrate critical thinking is to manipulate symbols. The primary aspect or property of language called into play whenever the student engages in critical thinking is its implicatory structure. Therefore to learn the many processes underlying critical thinking, the student must understand the implicatory structure of language.

What is meant by the term *implicatory structure of language*? The discipline of general semantics devotes much of its literature to the study of this principle. The implicatory structure of language derives from the arbitrary relationship between words and things. This relationship may be characterized in any of the following ways: (1) words are not the same as the things for which they stand; (2) whatever we say a thing *is*, it *is not*, because words are not things; (3) the language we use to talk about what we observe may be called the 'map'; the thing we are observing may be called 'the territory' — our maps must fit the territory. Furthermore, our

verbal maps must be 'checked against' the territory (that which can be observed) for 'goodness of fit.'

The term *implicatory structure* also refers to the '*abstracting*' properties of language. Whenever we speak about something we have seen, we abstract; i.e., we choose certain things to include, we exclude others. This process may be deliberate. The process of exclusion, however, may also be a function of the limitations of our sensory, neurological and linguistic systems. We may have failed to notice certain things at the expense of others. At the same time, we may unintentionally include certain observations that go beyond what was 'really' there. Such is the nature of the human symbol-using capacity; it permits us to confuse the factual with the inferential.

This admittedly brief discussion of the terms *implicatory structure* and *abstracting* sets the stage for a more involved examination of certain principles of general semantics that contribute directly to the development of critical thinking skills for high school and college students. The fostering of such abilities goes hand in hand with the development of an '*extensional orientation*,' another formulation in general semantics. An *extensional orientation* may be thought of as a perspective, consciously chosen, which guides the shaping and formulation of a person's knowledge structure, of a person's image or view of both the inner and outer realities of the individual nervous system. For the purpose of discussion, we can argue conceptually for the existence of an '*extensional personality*.' While the term applies to a broad range of linguistic and behavioral patterns involving both verbal and nonverbal levels, a person with an extensional orientation mirrors the linguistic choices of the critical thinker. Think of the terms '*extensional personality*' and '*extensional orientation*' as inclusive of critical thinking.

There are six important characteristics of the *extensional orientation*:

1. the ability to distinguish between facts and inferences;
2. the ability to avoid identification of words with things;

3. the ability to recognize similarity and difference (*indexing*) and the role of time as a factor of any occurrence (*dating*);
4. the ability to distinguish between simple and complex problems vis-a-vis the simplicity-complexity of suggested solutions;
5. the ability to identify appropriate standards of verification to support assertions or claims requiring proof; and
6. the ability to know when to act and when to delay action based upon available information.

Note the similarity between the six abilities listed above and the components of critical thinking skills discussed earlier in this chapter. Recall, also, the five parts of the Watson-Glaser Critical Thinking Appraisal (inference, recognition of assumptions, deduction, interpretation, and evaluation of arguments). The student with an extensional orientation will be keenly aware of the value of the map-territory analogy, the importance of formulating questions that can be answered by observation, and the role that language (with all of its limitations) plays in the proper development of questions and the validity of answers. Note that the 'extensional orientation' is content-free; that is, it is part of a *system* (general semantics) for 'talking about talking,' and, as such, may be applied to any discipline or body of content.

The six characteristics of an extensional orientation further define what is meant by the term *implicatory structure of language. To teach critical thinking skills is to teach understanding of the implicatory structure of language.* Teachers are well aware of the grammatic and the syntactic structure of the English language, but it is the implicatory structure that is crucial to the teaching and learning of critical thinking skills.

Problems with inferences, assumptions, deductive and inductive reasoning, interpretation, and the evaluation of arguments are problems arising fundamentally from the inability to cope with *language.* Note that this word seldom appears in the literature on critical thinking skills, perhaps because writers take for granted that

when teachers help students learn critical thinking skills, it is, after all, language that is the focus of their attention. It is the very 'obviousness' of the statement that makes the significant role of language more likely to be ignored. Further, we are dealing with the implicatory structure of language — perhaps its most deceptive property

What to Teach, How to Teach It

Heretofore teachers may have associated teaching of critical thinking with the teaching of logic, reading comprehension, set theory, English composition, and report writing. The extent to which each of these subjects contributes to the development of critical thinking skills is empirically verifiable and worthy of careful study. Concomitant with the teaching of such content, however, is a decline in critical thinking ability. The press and the business community attest to the problem almost daily. The discipline of general semantics addresses the problem directly, and this is why we encourage its use in high school and college classrooms.

If critical thinking skills are to be learned, what is it that teachers must teach? Taking into account what has been said so far, teachers will want to be sure that students are able to demonstrate the following:

DISTINGUISH BETWEEN A FACT AND AN INFERENCE. Teachers can approach this distinction in a number of ways: by creating lists of statements and asking students to distribute the statements into two categories (factual, inferential); by asking students to dissect a newspaper article for its factual content; by administering, scoring, and discussing the *Haney Uncritical Inference Test* (5) (a series of stories followed by statements about the story which students must mark as "true," "false," or "cannot tell," based upon the information in those stories.) These approaches teach by example. Before examples can be categorized, students should be able to distinguish conceptually between a fact and an inference.

EXPLAIN THE RELATIONSHIP BETWEEN WORDS AND THINGS. It is important for students to understand the arbitrariness of that relationship coupled with the need for conventional agreement on and acceptance of denotative meanings of words. Recognizing the arbitrary nature of the relationship between symbols and the referents for which they stand helps students avoid 'hardening of the categories' — seeing complex issues in either-or terms, categorizing in stereotypic fashion, or refusing to accept more precise definitions for things. Teachers may wish to explore the arbitrariness of words like 'up,' 'down,' 'hot,' 'cold,' 'light,' 'heavy,' 'young,' 'old,' and the extent to which their meanings depend on the people using them as well as the circumstances surrounding their use.

EXPLAIN THE PRINCIPLES OF *INDEXING* AND *DATING*. To think critically, students must be able to integrate seemingly contradictory principles of uniqueness, similarity, and difference. Knowing when to apply each principle contributes significantly to the development of critical thinking skills. For example, the same word, 'cancer' stands for a wide variety of diseases. Every doctor and patient should be aware that $cancer_1$, is not $cancer_2$. Two patients may share the 'same' illness, but because of individual differences, may require different treatments. Again we index the illness —$diabetes_1$ is not $diabetes_2$ — to remind us of both similarities and differences. It helps us to remember the uniqueness of all events while at the same time it permits us to generalize, to accumulate reliable knowledge that may be passed from one person to the next, or one generation to the next. Students should also be able to recognize time as a factor in any occurrence in this process world: $John_{1990}$ is not $John_{1984}$, $Patient_{Wednesday}$ is not $Patient_{Monday}$, etc.

STIPULATE THE STANDARD OF VERIFICATION REQUIRED TO SUBSTANTIATE A GIVEN CLAIM OR ASSERTION. A standard of verification may be thought of as a 'yardstick' by which the student measures the accuracy of a given statement. Questions that a teacher might ask in preparing a unit on this principle include: What evidence would be required before we can accept statement (X) as true? To what extent does our knowledge of the source of a

message affect our willingness to believe it? Teachers may wish to have their students analyze newspaper articles and editorials for the presence or absence of such standards of verification. Teachers may also assign different sources to the same message and study differential reactions to the pairing of source and message.

DISTINGUISH BETWEEN SIMPLE AND COMPLEX SOLUTIONS TO PROBLEMS. Knowing how to look at a problem affects the student's ability to solve it. Many times seemingly complex problems can be made more manageable by knowing what questions to ask or knowing how to define the relevant terms. Conversely, complex problems are often thought to require 'simplistic' solutions. In either case, students must be sensitive to the role that language plays in creating both argumentative dilemmas. One cannot get a clear answer to a vague question. Examination of the daily newspaper should provide plentiful examples of 'simplistic' solutions to 'complex' problems.

BASED UPON 'KNOWN CIRCUMSTANCES,' DECIDE WHETHER A SITUATION REQUIRES IMMEDIATE ACTION OR A DELAYED REACTION AND EXPLAIN THE REASON(S) FOR YOUR CHOICE. Critical thinking entails the ability to assess situations, given certain known details, and to recommend courses of action. The stages involve diagnosis, analysis, data collection, interpretation, evaluation, and recommendation. Life frequently requires such decision-making with varying degrees of consequences for failure to make the correct decision. Such decision-making often involves a choice between equally unsatisfying alternatives. Teachers are encouraged to select issues appropriate for their students and create their own 'scenarios.'

REACH A CONCLUSION FROM A SET OF PREMISES BY INDUCTIVE (specific-to-general) AND DEDUCTIVE (general-to-specific) REASONING. In addition to reaching appropriate conclusions warranted by premises, students must learn to test first for the validity of those premises.

DISTINGUISH BETWEEN CAUSAL AND CORRELATIONAL RELATIONSHIPS. The most common fallacy confuses proximity (two events occur close to each other in time) with causation (one event must have caused the other). Distinguishing between correlational evidence and evidence supporting causation is central to the development of critical thinking ability. The need for such discrimination is routine in both the physical and social sciences.

REASON QUALITATIVELY AND QUANTITATIVELY TO SOLVE PROBLEMS. Students should be able to utilize both types of evidence to build a case for or against a particular assertion, generalization, or principle. One tried-and-true technique to make students think about the quantitative process is to introduce water-jar problems to students, who must find a way to obtain a specified amount of water from jars which contain water but not in the proper amount. For example, how does a student obtain 20 quarts of water from two jars, one of which holds 29 quarts, the other of which holds 3?

Critical Thinking, General Semantics, and Scientific Method

A review of the critical thinking skills described above will show two clear currents: (1) critical thinking skills are directly related to mastery of the *implicatory structure of language*, and (2) the development of critical thinking skills rests heavily upon the teaching of *scientific method* to students at all educational levels. This point warrants further analysis.

In 1933 Alfred Korzybski, a Polish chemist and mathematician, published his major work, *Science and Sanity* (6). Its very title suggests the thrust and scope of the work: *to foster the adoption of the methods of scientific inquiry by the non-scientist.* Korzybski argued that scientists are very careful and precise about the way they use language, i.e., they distinguish fact from inference, test hypotheses derived from theory, observe reactions and interactions, and carefully record those observations while attempting to control

for their own biases. Korzybski created the name '*general semantics*' for his *system.*

Thus far this chapter has described the synergy between Korzybski's system of general semantics and the study of critical thinking. The reader is now ready to explore this relationship more intensely. Korzybski wrote at length about what he called '*consciousness of abstracting.*' By this he meant that our use of language, coupled with the limitations of an imperfect human nervous system, causes us to leave out details, to miss some of what we observe. Further, consciousness (or awareness) of abstracting is tied to our familiarity with '*levels of abstracting.*' These levels include fact, inference, class terms, theory (verbal levels), as well as emotions, sensations, perceptions, feelings, and observation (non-verbal levels.) Critical thinking requires us to move through these levels and from one to the next with great rapidity, using certain levels to 'validate' or test other levels. This is precisely what scientists do when conducting investigations of products or even psychological constructs. The better we are at sorting out these levels of abstraction — the more aware we are of them — the stronger our critical thinking abilities.

Distinguishing the levels of abstraction from one another helps the learner to formulate *answerable, meaningful, questions.* General semanticists maintain that for questions to have meaning, there must be some operation or set of operations which can be performed to answer them. Familiarity with the notion of levels of abstraction permits the careful examination of questions for their meaningfulness and for the appropriateness of empirical techniques to answer them. Questioning our questions helps to determine their implicatory structure, which in turn uncovers the hidden assumptions of the learner or the possible confusion of the levels of abstraction.

The Extensional Person as Critical Thinker

Note that an 'extensional orientation' shapes the core of perception and judgment. An extensional person engages in critical thinking as a way of life. Such a person

(1) seeks *referents* for words; is cautious of but not fearful of higher-order abstractions; discriminates between and among the verbal and non-verbal levels of abstraction, especially factual and inferential levels, but accepts the *uncertainty* and *probability* of events as a 'given' and not as a cause for frustration; that is, students will remember that maps (words) are not the same as the territories (observed events) they represent, will differentiate between facts and inferences, and learn to deal in probabilities rather than certainties;

(2) recognizes important *similarities and differences* between individuals and events; is *multi-valued* as an investigator, but two-valued when faced with the need to act; avoids allness patterns, but accepts the relative power of higher-order generalizations which have a higher degree of probability and predictive value; that is, students will remain open to the probable diversity of solutions while investigating scientific or social problems, but accept the inevitability of decision-making based on generalization;

(3) recognizes *time* as a factor of any occurrence, but uses time as a potentially discriminatory tool which may or may not be relevant; recognizes that the degree of flux represented by the language used to talk about the world varies from lower to higher levels, since generalizations stress similarities and not differences; the lower the level, the greater the uniqueness and dissimilarity of objects, etc. implied by the language; that is, students engaged in critical thinking will often base their solutions to problems on a delicate balance of factors, including the time (*date*) or the order of events, perceived similarities and differences, and the relationship between what can be observed directly and what can be inferred;

(4) accepts the principle of *non-identity* on the non-verbal level and recognizes identity of words and referents as a potential source of human error, but nevertheless prefers an accurate map of the territory to no map at all; that is, students will remember that while language can easily mislead, carefully structured maps developed by the principles of general semantics and scientific method lead to the accumulation of reliable information;

(5) recognizes the *uncertainty* of outcome of any decision; knows when observation is unnecessary or impractical; is prepared to be proved wrong; recognizes the value of the *delayed response* and *conditional behavior*; accepts uncertainty by modifying behavior on the basis of new information; that is, students will move smoothly between higher and lower levels of abstraction, will delay judgments as long as possible and replace conditioned (learned, predetermined reactions to seemingly familiar stimuli) with conditional (delayed, unanticipated, unplanned) behavior; they will readily modify conclusions and judgments based upon new information;

(6) states the *standard of verification* whenever possible; alerts the listener that he (the speaker) may be wrong or that the situation may change; uses *operational, conditional,* and *qualifying terms*; recognizes that the projection of his own perceptions onto external events affects his judgments; recognizes that the observer is a part of any verifying, defining, or observational process; that is, students will be heard to use phrases like "according to..." and "based upon..." more frequently;

(7) faces the challenge of *complexity*; avoids needlessly complex solutions to problems; recognizes that language can both create and reduce complexity. Refer to the list of critical thinking abilities; *the extensional person is, by definition, a critical thinker.*

A Research Suggestion

Before concluding this chapter, it may be prudent to raise certain issues related to the teaching of critical thinking skills. Critical thinking involves reading and listening. If students are to think critically, they must be able to read with comprehension and listen in specialized ways. Critical thinking entails critical listening: listening for facts, for formulations, for hidden assumptions, for biases; listening for the levels of abstraction implied by the speaker's language. Such skills must be practiced; they are not easily learned. And what happens when we try to listen critically to speakers on issues laden with emotion or socio-political implications? Extensive research is needed to explore the teaching of critical thinking skills in the context of individual sensibilities and belief systems. Clearly, there is much work to be done.

Teachers who have read this chapter should have some understanding of the behavioral indices of critical thinking and recognize the contributions of the discipline of general semantics to the effective teaching of critical thinking skills. Those who teach teachers should be on intimate terms with the principles covered in this chapter. In teaching such skills to high school and college students (and to the teachers who teach them), our educational institutions will return to their primary mission. That mission is teaching students. To think.

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General semantics is not the 'study of words' or 'the study of meaning,' as these terms are ordinarily understood. It is more nearly correct to say that general semantics is concerned with the assumptions underlying symbol systems and the personal and cultural effects of their use. It is concerned with the pervasive problem of the relation of language to reality, of word to fact, of theory to description, and of description to data — of the observer to the observed, of the knower to the knowable. It is concerned with the role of language in relation to predictability and evaluation, and so in relation to the control of events and to personal adjustment and social integration.

Wendell Johnson

MANAGERIAL JUDGMENT AND CRITICAL THINKING

William Exton, Jr.

In the business world, the most conspicuous material rewards generally go to those who demonstrate a capacity to exercise judgment effectively in matters involving economic gain or loss. And the market economy offers ample opportunity to apply one's judgment for profit and advancement.

How to foster development of superior judgment in business matters has been the subject of extensive and amply financed research and experimentation. The results are manifest in a wide range of training, education and planned learning experiences. And this massive developmental activity has great relevance to 'critical thinking' — and vice versa.

Surely 'critical thinking' and 'sound judgment' are not only parallel in function, but overlap greatly. Surely the competencies implied by the term 'critical thinking' have much in common with those we attribute to an effective manager. And, just as surely, the enormous methodological resources available for teaching such management skills as 'problem-solving' and 'decision-making' can be appropriately adapted for teaching critical thinking in the schools. It is, then, not necessary for those who would teach critical thinking to re-invent the wheel. For many aspects of critical thinking, educators need only adapt practices found useful in management training.

As a management consultant, I searched for a consistent, integrated methodology — one which was so general in its applicability that it could be taught *per se*, or in relation to virtually any body of content. I wanted an intellectual discipline — at least potentially rigorous — which provided synergistic formulations with a history of successful applications. Fortunately, such a discipline already existed, known internationally as general semantics. Its applications in business are well illustrated in *Communication and Organizational Behavior*, by William Haney (1).

General semantics, based on the seminal work of Alfred Korzybski (2), has been taught at a number of universities *per se* or in connection with regular or special courses. Its potentials have been explored in more than 120 doctoral dissertations, including several that found general semantics can be taught at elementary and high school levels with positive effects on critical and creative thinking (3).

Many of us grew up with textbook problems that provided all of the necessary information — and the assumption that all provided information was valid. In the business world (or the world generally) we never have *all* of the information — and we cannot assume that the information we have is valid. Critical thinking requires (among other things):

1. Validity of the *information* (observations or data) that underlies the assumptions to which values and logical processes are applied.

2. Validity of the *assumptions*, both initial and sequential, based upon the available information.

3. Validity of the *values* applied in the exercise of evaluative judgment.

4. Validity of the *logic* of processes involved in inference, generalization, deduction, extrapolation, etc.

5. Recognition of hidden assumptions, unfounded implications, dubious inferences, subjective orientations, prejudice, bias, slanting, questionable perspectives, etc., both in one's own evaluative process and in the communications of others.

We base our thinking largely on our assumptions. But we are often not conscious of the assumptions entering into our evaluations and

decisions. General semantics training aims at developing optimum consciousness of assumptions — as well as consciousness of abstracting.

Critical thinking should help us to identify those values most likely to foster valid understanding and to guide our decisions along lines that are best suited to our own long-term — rather than short-term — interests.

As we experience the world around us, it is the inevitable tendency of our perceptual function to evaluate our perceptions by association with past experience, and thus, inevitably, in terms of the more-or-less familiar. This process often leads us to notice similarities of a new perception to an old perception — and to disregard significant differences. Once we label the new perception on the basis of similarities alone, we have taken a first step toward un-critical thinking. The more the situation looks familiar, the more likely we are to overlook elements which appear unfamiliar — and which might involve unfamiliar consequences. So we must learn to be critical of our own perceptions, to silently question, re-interpret, re-label, and re-evaluate what our senses tell us.

But the kind of critical thinking that we apply to direct experience will not serve us adequately when we evaluate the *communicated experience* we derive from the words we hear or read. We must take into account the unique nervous system (map-maker) that produced those words, the map-maker's values and perspectives, and the nature of language as a symbolic process.

We must learn to understand the limitations of language and the ways in which the very structure of language distorts communication from the intent of its originator, as well as the ways that communication is subject to distortion through individual poverty of expression, unfamiliar terminology, equivocal vocabulary, misapprehension, etc. But we must also be aware of the ways in which each item of linguistic communication is inevitably shaped by, and reflects the evaluative and purposive orientations and conscious

and unconscious assumptions of its uniquely individual human origins. Only through such understanding can we begin to detect — and to discount, allow for, and protect ourselves from — bias, slanting, propaganda, planned deceit and deliberate falsehoods. Only then can we be sensitive to inconsistencies, false assumptions, self-deceptions, deluded beliefs, distorted reportage and purposeful omissions that characterize so much of what is broadcast, printed, and echoed in the conversations of those we know.

We also require a workable notion of epistemology — how we 'know' what we claim to 'know.' And we need an adequate appreciation of the extraordinary neuro-linguistic processes that enable us to translate our perceptions into words — and to translate the words of others into something meaningful and, we hope, with some correspondence to the intended message. We must learn to "perceive ourselves in the process of perceiving."

There is one unique methodological discipline which, in a creatively integrated way, addresses both epistemology and neuro-linguistics. This dynamic synthesis distinguishes general semantics and renders it outstandingly relevant to the development and exercise of critical thinking.

To me, the most useful and effective pedagogical device for illustrating how language relates to what it is intended to represent is found in the map-territory analogy of Alfred Korzybski.

Visualize, if you will, the United States as you know it: a continent-wide expanse of territory, with extremely varied terrain; with all its states, counties, cities, towns and villages; with rivers, mountains, roads, streets, bridges, railways, power lines, etc., etc..

Now consider a map of the United States, as complete and detailed as any map can be.

The relationship between *that* 'map' and *that* 'territory' can best be summarized in these statements:

1. The map *is not* the territory. By analogy, words *are not* the things they represent. This may seem obvious. But we do, far more often than we realize, *act as if* the word we have used (or heard) *is* the thing itself, the words on paper *are* the situation.

2. The map *is not all* the territory. Even the most detailed map cannot represent *all* aspects of the territory. Words, no matter how many, can never tell us *all* about anything.

3. The map is self-reflexive. Every map reflects the map-maker. Words reflect — and tell us something about — the person who speaks or writes them.

Those who learn to apply the three-fold principles of map-territory relationships to what they hear or read (or speak or think) will have made significant progress in the direction of critical thinking, because they will be aware of the perceptions behind the communications.

In this age of the 'Information Explosion,' we are often overwhelmed by the flood of information available to us. We face an over-kill of information — sought and unsought, relevant and irrelevant, reliable and misleading, useful and distracting, all of which makes demands on our time and attention.

In order to cope with situations of any degree of complexity, we must not only sort out that part of the available information which is useful, but must also sense what information is needed for an adequately formed evaluation.

The kind of critical thinking required here is clearly linked to the consonance of words with perceptions, of 'map' with 'territory,' of

our *perceptions* of the problem-situation with the situation 'outside our skins.'

'Consciousness of abstracting,' a key principle in general semantics, reminds us that any 'process' from which we may derive a perception has an infinite number of characteristics, which is why we can never know *all* about anything. It also reminds us that each person abstracts differently. People do not necessarily abstract the same characteristics and they evaluate characteristics differently.

This bit of epistemological insight should help us to realize that the process of abstracting is fallible and the results of that process should be tested — evaluated and re-evaluated.

Abstracting should be recognized as a multi-ordinal process. We can go from the label 'apple' to higher order abstractions ('Fruit,' 'produce,' 'agricultural product,' 'item in the market economy,' etc.) However, once we enter upon the process of more inclusive labeling, it will no longer be clear to others that we are still referring to an 'apple.'

Critical thinking demands that we seek out the lower order abstractions underlying the higher order abstractions we use or accept from others. In business as in politics (and many other forms of human activity) we often give or receive higher order abstractions cut loose from their moorings. The words may sound profound, but we are left to wonder what they refer to in the world 'out there.' The 'extensional orientation' recommended by Korzybski includes checking maps against territories, higher order abstractions against lower order abstractions. It requires that we move through levels of abstraction rapidly, using certain levels to validate or test other levels. (See the chapter "Critical Thinking as Extensional Orientation" by Philip Sabatelli.)

It is certainly noteworthy that many managers in business and industry have found in general semantics a coherent methodology for relating their perceptions to an increasingly complex world.

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William Exton, Jr., was a management consultant, designer of teaching aids, captain U.S.N.R. (two bronze stars for combat in World War II), world traveller, raconteur and versifier. He was president of the Institute of General Semantics at the time of his death in December 1988. He envisioned and persevered to bring into being, the July 1988 International Conference celebrating the Fiftieth Anniversary of the Institute of General Semantics at Yale University. Many of the chapters in this book were first presented as papers at that International Conference.

We can change the behavior of others only to the extent that we can help to produce situations and experiences which lead them to modify relevant assumptions.

Hans Toch and Malcolm S. Maclean, Jr.

THE RELEVANCE OF GENERAL SEMANTICS*

ALVIN TOFFLER

I was hoping to sneak in here, because I am a rank amateur at general semantics, but over the years I have had a memory of an evening with Korzybski at Columbia University years ago. And I, of course, read *Science and Sanity.*

On the way down here tonight I stopped to ask myself what I had retained. I think I can list very simply what stuck, and I can easily see how it connects with the work I have done since. Clearly, Korzybski was not my only influence — all of us are bombarded by stimuli and ideas from all over the place; but I think that many of the things that I have written are at least compatible with what general semantics would hold.

Among the things that I realized that stuck, were, first, the whole idea of non-Aristotelian logic, which was a completely new idea to me, but made an awful lot of sense. Reality did not come packaged with "either-ors" — at least to me — and I think that is still a part of the way I like to analyze things. I think in terms of multiple models, rather than a single model. I think of things overlapping, blending into each other, and so on; and change, which is my preoccupation, is really a complex process.

The second idea is time-binding. Time has been central to my writing because my writing has focused on the issue of change, and change is a function of time, or vice versa. In *Future Shock*, I wrote about the acceleration of change, about different cultures' perceptions of time and the different paces of life, all of them being

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* Dropping in at the 1988 International Conference on General Semantics at Yale University, Alvin Toffler was invited by Program Chairman William Exton, Jr. to speak. These are his remarks. Reprinted from *Et Cetera* Volume 46, Number 3, Fall 1989, by permission of the International Society for General Semantics.

time phenomena. And of course, as one who is called a "futurist", I spend a lot of my time thinking about the past as well. It seems to me that one is not fully a person if one does not see oneself in a temporal perspective that reaches back through the eighty billion human beings who preceded us since our own earliest beginnings and forward in time, as it were, to the stars, which somehow symbolize the future, though what we see when we look at them is, in fact, the past.

The third idea is that the Map is Not the Territory. It is a humbling notion for a writer because I am busy producing maps, and that is my function in life — aside from being human. In the introduction of *Future Shock*, indeed, I wrote about cartography and the need for even primitive maps. Primitive maps are better than no maps. Nevertheless I realize deeply the difference between the map I am writing about and the reality that I can't quite get down on paper, no matter how hard I try.

I remember one experience when I was a journalist in Washington, covering a Senate hearing. I went home that night to write the story. I had sat in the room for several hours listening to the speakers on disarmament statistics, ballistic missiles, and nuclear weapons, and so on, and I sat down to write the story. I had about 500 words to condense it into and knew that my story would be on page one the next day. But no matter how many times I wrote it, and how many different approaches I used, somehow I knew that I couldn't capture the full reality. That led me to think about the front page of that newspaper — or any newspaper. I knew my story would run on page one alongside nine or ten others stories by other journalists who were also writing, who were also not capturing the full reality they were reporting. Some of them may have been more intelligent that I, or some less, and some more responsible, some less. So that since then, I have regarded page one of the newspaper as a kind of fiction, a distorted map of a territory, too complex and too fast-changing to map. Nevertheless it is a fiction that we live by.

Finally, the Map is Not the Territory leads me to the notion that all assumptions should be challenged. We live in a maze or what I call

an "architecture of assumptions." We build assumption upon assumption upon assumption, and we wind up with abstract notions like "productivity" that become obsolete as accelerative change undermines them. The result is the idiocy of the conceptual categories used by, say, economists — categories that don't match the territory, but categories which they somehow can't give up. That takes me from categories to metaphors and names.

Naming is very important to an author, and titles sometimes register and sometimes don't. I have often been asked about the origins of the concepts of *Future Shock* and *The Third Wave*. The process by which "Future Shock" was arrived at was basically analogy. I was interested in the phenomenon of "culture shock", and was interviewing a psychologist one day, a friend of mine, asking her about the symptoms of culture shock and what causes culture shock. As we spoke, it occurred to me in the course of that interview that if you could be disoriented by being relocated in space, that you could also be disoriented by being relocated in time, and that the rapidity of change has a similar effect on our culture and our people. The idea of future shock sprang from that analogy with culture shock, a transposition from space to time.

In the case of the "Third Wave", there are many theories of economic and social development. Rostow wrote a book in the fifties called *The Stages of Growth* which became one of the dominant texts on the strategy of economic development in the third world. My wife and I thought the notion of stages too static and unidimensional, while the image of waves of change suggests a less mechanical and potentially multidimensional process. As you know, we use the "first wave" to mean the processes associated with agriculturalization and the agrarian era; the "second wave" to mean the processes of industrialization and the industrial era; and the "third wave" to mean the changes forming a new society today. That is the way we use the metaphor of waves. And the nice thing about it for us is that waves suggest change, motion and process. But even better, it also possible for *multiple* waves of change to course through society simultaneously. It is also analogically interesting

because when waves collide, you get conflict, you get cross-currents. For these reasons, we felt the metaphor of waves offers a powerful way to characterize periods of fundamental change in society. But again, it is just a metaphor, and so all of the questions that are raised by *Science and Sanity* are inherent or should be inherent in the work of any thinking writer or communicator. In short, the emphasis on process that Korzybski stressed is present in all the intellectual work my wife and I have done over the years.

I thank you for what you are doing. I popped in on just a whim, knowing I was just an hour away, and I thank you for letting me crash your party.

A world-renowned scholar and social critic, Alvin Toffler's works are read in more than 50 countries. He has been at various times a Visiting Professor at Cornell University, a member of the faculty of the New School for Social Research, a Visiting Scholar at the Russell Sage Foundation, an Associate Editor of *Fortune* magazine — and, for five years, a factory worker. He holds five honorary doctorates in science, letters and law.

His books include *The Third Wave*, *The Eco-Spasm Report*, and *The Culture Consumers*. His articles have appeared in such journals as the *Annals of the American Academy of Political and Social Science*, as well as in such popular magazines as *Playboy* and the *Reader's Digest*. He works closely with his wife, Heidi, and is a much sought-after lecturer, speaking before leading business, government, academic and citizen's organizations around the world. *Future Shock* won France's prestigious Prix du Meilleur Livre Étranger.

Language plays a tremendous role in human affairs. It serves as a means of cooperation and as a weapon of conflict. With it, men can solve problems, erect the towering structures of science and poetry — and talk themselves into insanity and social confusion.

Irving J. Lee

Every person carries within his head a mental model of the world — a subjective representation of external reality. This model consists of tens upon tens of thousands of images. These may be as simple as a mental picture of clouds scudding across the sky. Or they may be abstracted inferences about the way things are organized in society. We may think of this mental model as a fantastic internal warehouse, an image emporium in which we store our inner portraits of Twiggy, Charles DeGaulle or Cassius Clay, along with such sweeping propositions as "Man is basically good" or "God is dead."

Any person's mental model will contain some images that approximate reality closely, along with others that are distorted or inaccurate. But for the person to function, even to survive, the model must bear some overall resemblance to reality.

Alvin Toffler
Future Shock

THE ROLE OF ANALOGUES IN PROMOTING CREĀTICAL THINKING AND FOSTERING INTERDISCIPLINARY UNITY

DAVID F. MAAS

Interdisciplinary Travel Through Analogues

Does the study of analogy have anything to do with creātical thinking? Analogy or metaphor (including the literary figure of speech, theoretical construct or system model) is actually more central to critical thinking and creative problem solving than is the study of formal logic. J. S. Bois insists, "In actual life, we do not use formal syllogisms, we think with analogies" (3, p. 203). Arguing for the primacy of metaphor, Rudolph Jordan claims "Men do not think in logical terms. Men think predominantly in the elastic terms of analogy" (8, p. 267).

Management consultant Karl Albrecht in his text on critical thinking, *Brainpower*, suggests that people habitually "piece together a collection of stored mental models of the world and its workings which actually become their world view" (1, p. 122). When new sensory impressions are absorbed into the nervous system, they are filtered through these memory models, enabling people to think and process information. As Wendell Johnson has warned, "You can't write writing." It is also impossible to think thinking, (although you can think *about* thinking.) Writing and thinking are exclusively dependent upon life experiences stored in the form of images or memory models.

The analogy has not only been the bridge connecting the known with the unknown, but also the primary conduit bridging one academic content area with another. Interdisciplinary travel could be encouraged by an exercise in comparative metaphor. Commonalities and similarities are more likely to be found by a systematic comparison of theoretical constructs and their attending metaphors than by studying any other aspect of the subject.

The unification of knowledge has been one of the perennial goals of general semanticists. Both Oliver Reiser (14) and Theodore Longabaugh (9) have written major works with the unification of the arts and sciences as the overriding purpose, focusing sharply on the need for an interlocking of theoretical structure. The school of semanticists classified as the 'practical semanticists' contends that by the careful systematic examinations of the symbolic structure of disciplines, particularly the theoretical constructs or scientific metaphors, all fields of knowledge could be unified and integrated. Within this context, Oliver Reiser, deploring the inability of scientists to "integrate the bodies of knowledge created by science into a unified interpretation of man," emphasizes the structural similarities within and between many diverse funds of knowledge (14, p. 3).

At the 1968 International Conference of General Semantics, Elwood Murray suggested a major label change for the study of general semantics. Murray felt that a more accurate description of the province of general semantics might be 'Isomorphics' or 'Isomorphology,' which involves the similarity of structures. This alteration or intensification of focus would, according to Murray, "free general semantics for full functioning," enabling it to become the fully integrated science of man that Korzybski had intended (16, p. 40).

Interdisciplinary Analogue Laboratory

Murray's proposal was based upon the success of an intensive symposium called the Interdisciplinary Analogue Laboratory (I. A. L.) taught by Elwood Murray, Paul Hunsinger, and Tim Hopf in the summer of 1965. Hunsinger included the I. A. L. concept in a core curriculum project at Occidental College in the summer of 1966.

In these symposiums, Murray and Hunsinger tried to bridge the arts and sciences by means of analogies and structures generated by one area but applied to as many other areas as possible.

The initial attempts at building analogue units were randomly generated, including such diverse images as pollination, magnetism, radiation, and photosynthesis. Most of these analogue units were applied to the communication process. In subsequent seminars, the Interdisciplinary Analogue Laboratory was significantly expanded to include scholars such as J. Samuel Bois and Bess Sondel. The repertoire of analogues was greatly expanded to include such categories as consonance/dissonance, catalysis, and diffusion. A landmark paper, "Model for Pursuit of Analogue Investigation," by Sondel also emerged from these conferences.

The symposiums were continued in 1967 under the direction of Hunsinger. Many quality interdisciplinary papers including "The Union of Science and Art" and "Feedback and the Creative Act in Science and Art" were generated. It was the dream of Murray and Hunsinger to create a huge multi-volume synopticon of structures and analogues, benefiting not only communication theory, but a wide variety of academic disciplines.

The basic assumption of analogue study is that if two things are alike in certain known respects, they might possibly be alike in certain unknown respects. Fruitful hypotheses could then be generated from inferences about those unknown areas. The analogy provides the means for solving for the unknown, pushing back the frontiers of darkness or ignorance. Elwood Murray had two overriding objectives for his analogue laboratories:

1. To generate new analogies — more profound or insightful than those presently known and used.

2. To re-examine existing analogues, teasing out new and more productive insights than those previously discovered (12, p. 8).

One of the most promising implications for future research is that analogue study could provide a way (but not necessarily the only way) that interdisciplinary understanding and unification might take place.

Stressing metaphor's potential in uniting the disciplines, Elwood Murray commented that because of the "increased specialization of the curriculum, the inherent parallels among all the main divisions of the curriculum have been lost, and the countless parallels which may be used have never been searched out" (12, p. 11). Analogue pooling could be a systematic productive strategy for bringing those parallels back into focus.

In the Denver analogue labs, the principal beneficiary of metaphor pooling was communications theory. From the diverse content areas including physics, neurology, microbiology, etc., hypotheses were generated to explain the mysteries of the communication process. Because communication theory in a very real sense is the lifeblood of the social sciences, it would seem fair that the communication studies should serve as the clearing house for metaphor transfer. Murray insisted that "the social sciences cannot advance much beyond the understanding from communication theory and practice" (12, p. 11).

The proponents of the analogue labs, however, never intended that the metaphor traffic should be one way. As scholars from the diversity of content areas or disciplines pooled their resources, every discipline would mutually benefit. Commenting upon the mutual respect brought about by this cooperative interchange, Elwood Murray observed "if there is any rivalry, it comes in the desire to help the other fellow" (13, p. 42).

The planners of the Denver Interdisciplinary Analogue Labs sought to enlist the most widely diverse group of specialists possible, adding that "ideally all the chief disciplines of the curriculum from art to zoology should be represented" (13, p. 43). Murray wanted both breadth and depth, insisting that the "deeper the knowledge the scholar has of his area, the more resulting productivity as the areas are brought into communication with another" (13, p. 43). To have learned specialists from each discipline or content area would be ideal, but without some gigantic electronic gridwork (which is theoretically possible), it has not yet become a reality. Actually, not

every participant in the symposium has to be a specialist in order for the symposium to be productive.

Some of the participants in the Denver Interdisciplinary Analogue Lab summer seminars of 1965 and 1966 were not specialists, but students and professional people with interests in a variety of areas. Every college and university ought to have an Interdisciplinary Analogue Lab, but not every institution can afford the expense of drafting high powered scholars for a symposium.

It was Murray's hope that the participants in these Interdisciplinary Analogue Labs would take these insights back to their respective institutions, developing senior level courses spanning the entire school year, enabling students to "put together what they have learned from the diverse offerings of the curriculum" (13, p. 44). The senior year would be the most advantageous time for students to participate in interdisciplinary synthesis since it would pull together the seemingly disjointed segments of their undergraduate education and prepare them for the kind of specialization which does not divorce or encapsulate them from the rest of the academic curriculum or for that matter, from the rest of mankind.

Often undergraduates, upon completing general education requirements, find great difficulty in meaningfully integrating material they have assimilated. Courses are presented in linear strips lasting twelve to seventeen weeks. Unlike the rapid scanning lines of the television picture tubes which define an image instantly, the slow ponderous quarter or semester scanning lines do not quickly define a picture. As a result, a student in the senior year often has agonizing difficulty putting all the pieces together to form a stable configuration.

Generic Encoded Learning

One possible solution came to my mind as I was recovering from some automobile accident injuries in 1971. I read with great interest

J.S. Bois' *The Art of Awareness* (3) and Kenneth Boulding's *The Image* (4). I was particularly fascinated by Bois exposition of mental models. It seemed as though this small handful of formulations could provide a rallying point, clearing house, or integrating mechanism from which scientific metaphors or theoretical constructs could be endlessly generated. This progressive set of system models identified by Boulding and Bois as standardized analogies seemed to be a variety of what Jerome Bruner (5) (6) referred to as generic encoded learning. In Bruner's estimation, a student can be provided with a code or formula which would give him maximum ability to generalize.

These abstracted standardized analogies or mental models could serve as superb thinking tools when used with appropriate caution. Bois admonished that "a model that is much more simple than the phenomenon it is intended to illustrate shrinks our thinking to the model's dimensions and causes us to miss the complexity of the phenomenon" (3, p. 212).

The progressive complexity of the system models from the framework to the human analogue appears to represent the inherent isomorphism or structural similarity between less complex to more complex organisms (or systems of organizations). Much of the reason why analogies can be made from one level of organization to another (or one organism to another) is that we find similarities in the structures of existing observable phenomenon from the microscopic elementary particles, through atoms, cells, and multicellular organisms. So sure are psychologists about learning patterns from one class of organism to another, that assumptions about human learning behavior are inferred from the behavior of rats, mice and pigeons. Murray suggested that research in microbiology and the behavior of pathogenic viruses may provide insights about the human communication process and that research into the forces of magnetism may provide clues as to what makes human beings repulsive or attractive to one another (11, p. 250).

The generating and refinement of metaphors on each level of organization will aid inestimably in the understanding of higher order analogues, and ultimately the human being itself. Fixation at any metaphorical level short of the human analogues will not only retard complete knowledge of human behavior, but in a sense will dehumanize man by suggesting that he is something less than uniquely human.

Using the Boulding-Bois system models as thinking tools fosters metaphorical eclecticism, enabling the user to remain loose, fluid or unfixated in his images. In my 1977 doctoral dissertation, *A System-Model Approach to Metaphor*, I sought to apply the Boulding-Bois system models as an analytical tool, identifying isomorphic relationships within the metaphors of literature, slang, and educational psychology. In the concluding chapter I suggested that a single textbook constructed around the system models could provide an introduction to interdisciplinary studies, laying bare the essential features and exposing the structure of the most abstract theoretical construct as well as the most concrete figure of speech. The sciences and the arts, in one sense, drink out of the same metaphor pool.

The system models, as outlined by Boulding and Bois, have already served as guiding images to help theoreticians generate hypotheses. I firmly believed that the models could also serve as guiding images for students enabling them to identify explicit and implicit models and analogies used by diverse disciplines throughout the arts and sciences.

Seven Keys to Images of Order

In 1980, I completed a rough draft of a textbook, applying the seven Boulding-Bois system models to twelve representative academic disciplines, ranging from the hard sciences to the fine arts. The work was intended to be an open system, enabling students to add

to, modify, and find further subtleties in the models and images under scrutiny.

The salient features or characteristic of each model I placed on an open-ended taxonomy, utilizing decimal points to enable the user to add additional features or refine the existing ones as they were needed, bringing additional subtleties into focus. Boulding or Bois never intended these models to become hypostatized or reified so that they would lose their effectiveness or fluidity.

My textbook, *The Images of Order* (10), was intended to be an example of how the Boulding-Bois system models could be used as a heuristic tool, enabling students to penetrate the boundaries of disciplines or content areas unfamiliar to them. The first chapter was a background of the Boulding-Bois system models, ending with an open-ended taxonomy listing some of the principal features of each analogue: (1) the framework (or static structure), (2) the clockwork (mechanical structure), (3) the thermostat (self-regulating structure), (4) the cell (self-reproducing structure), (5) the plant (self-expanding structure), (6) the animal (self-moving structure) and (7) the human (self-reflexive structure). My students have added many features to this list.

Seven additional chapters, providing examples of how these system models could be used, were primarily derived from a series of introductory textbooks representing the physical sciences, the social sciences, and the arts. The examples were not intended to be exhaustive or necessarily representative, but they were intended to be used as pump-priming exercises, getting the students acclimated to the metaphor and metaphorizing.

The choice of the metaphor can dramatically alter the perception of the phenomenon under scrutiny and can also change a person's behavior as well. I remember a ninth grade teacher cautioning the students that while studying for tests, they should not envision their minds as closed fruit jars, but as absorbent sponges. The change in

the mental image instantly lowered the anxiety level, encouraging a more relaxed approach toward studying.

In my text, I encourage metaphoric eclecticism, systematically working the concept under scrutiny through a progressive selection of increasingly more complex images.

In the *framework analogue*, for example, the student views the mind alternately as Aristotle's picture of a piece of wax receiving impressions from an iron signet ring, Locke's concept of a tabula rasa, or scraped tablet, Johann Herbart's model of the mind as a vial containing a rather volatile apperceptive mass, Freud's picture of the human personality as a three-tiered iceberg. Kurt Lewin uses space in a non-Euclidean sense to depict psychological regions. The life-space model is a heuristic device to portray in spatial imagery psychological equilibrium and change.

Frameworks are useful to depict positional or spatial concepts, but must be modified or added to if the model is to incorporate movement or depict interdependent moving parts. It is at this stage in model-making that the concept of 'mechanism,' as depicted by the clock — with its wheel and balance — must be introduced.

Clockwork metaphors are abundant throughout psychology. According to psychologist Donald O. Hebb, the mind is basically mechanistic rather than vitalistic. The biggest problem for psychology, insists Hebb, "is to construct in imagination the complex machinery of mind that will account for the phenomena of behavior" (7, p. 3). Mechanistic determinism is implied in the Pavlovian and Skinnerian models of classical and operant conditioning. The cyclical, cause-effect assumptions are found throughout the S.R. (stimulus response) association schools of psychology, including the theories of Thorndike, Watson, Hull and Skinner. The clockwork metaphor is implicit in the Skinnerian practice of precisely measuring the frequencies of responses organisms have previously made in order to accurately predict future response frequencies and reinforcement schedules. Mechanical constructs reveal much to the

researcher, but they severely limit his thinking if he can't move beyond the image of the cyclical machine.

The model which in one sense bridges the gap between mechanical and living models is the *self-regulating thermostat* or *cybernetic model.* The theory of the self-regulating model has been worked out by Norbert Wiener, who derived the term cybernetics from the Greek word for *pilot* or *governor* to describe the "study of messages which control action." Wiener's cybernetic models have helped to develop sophisticated auto-pilots and guided missile systems.

The concept of equilibrium, a feature shared by all the major schools of psychology, is an essential characteristic of the thermostat analogue. The thermostat's main function is to maintain a homeostatic balance. The thermostat keeps a temperature within an ideal range, calling for heat when the temperature drops below a minimum acceptable level and turning off the heat when the temperature rises above a maximum acceptable level. Pavlov, Cannon, Freud, Skinner, Lewin, Thorndike, and others have all contributed to the thermostat homeostatic analogue. A prime example of the homeostatic analogue is summed up in what is known as Freud's principle of constancy:

> When an organism is stimulated, a tension or dis-equilibrium takes place. Prior to the onset of the stimuli one must postulate a state of equilibrium. Once the organism is stimulated, the disequilibrium tends to terminate. Once again the organism tends to restore its former balance. This can be accomplished by discharge of energy. It is as if the mental apparatus tried to keep the quantity of excitation as low a possible or, at least to keep it constant, as if increasing excitation jeopardizes the existence of the organism (17, p. 209).

The restoration to homeostasis or equilibrium is, according to Freud, the function of energy discharges. The ego is the control mechanism which keeps the level of psychic energy constant. Freud claims that

his entire construct of the personality was heavily influenced by physics, and that psychical energy was modeled after electrical concepts discovered by the natural sciences and compared to electrical discharges.

The *cell analogue* is the most basic of all the living images. In addition to containing all of the components of the spatial and mechanistic metaphors, it also adds the features of self-maintenance and self-reproduction. While the mechanistic analogue has to be maintained by something external to itself, the cell contains within itself a plan for survival, never resting until death overtakes it. The cell is able to ingest, digest, and eliminate foreign substances (which it must selectively discern as nutritive) transferring these raw materials into itself. Boulding describes the cell as a basic open system "which maintains itself in the midst of a stream of through-put" (4, p. 33).

The dominant cell metaphor in cognitive field psychology was provided by Kurt Lewin, who in his topological concept of the life-space used an amoeba-like structure stretching out in various directions, incorporating new through-put of experience without changing its basic composition. The life-space construct depicts both the person, represented by the nucleus of the cell, and his psychological environment, represented by the protoplasm-like substance surrounding the nucleus.

The *plant analogue* adds differentiation of function to the self-reproducing and self-repairing aspects of the cell. Kurt Lewin uses the term *genotype* to label unobservable data (represented only through constructs) and *phenotype* to label observable data (reflected in actual behavior) (2, p. 380). The concept of a genotype which ultimately develops into a phenotype is implicit in the writings of Jerome Bruner, who suggests that the best kind of instruction is that which provides a "coding system which presents subject matter in a way to guarantee the maximum ability to generalize" (5, p. 50). One branch of cognitive-field psychology known as phenomenology

emphasizes attention to the continually growing nature of the human mind — the basic uniqueness of the plant analogue.

To the features of spatiality, mechanism, self-reproducing, self-repairing, and self-differentiating, the *animal analogue* adds the feature of self-moving. In Gestalt-field theory, learning is described as purposive and explorative, rather than merely reactive. This explorative feature requires a metaphor capable of locomotion. Lewin's life-space construct incorporates the animal analogue feature of space-binding, or self movement. In Lewin's life-space construct, the person interacting with his environment is shown moving along a path which he calls a vector. Vector is a concept Lewin has borrowed from physics to metaphorically illustrate the relative direction and intensity of a force.

The *human analogue* incorporates what Korzybski has identified as the single observable feature distinguishing human behavior from animal behavior — that of time-binding. In psychology two constructs incorporate this self-reflexive time-binding feature. Kurt Lewin's life-space construct as well as J. Samuel Bois' construct of the semantic transactor incorporates the impact of past experiences and future anticipation in human behavior. The semantic transactor analogue is admittedly a highly tentative human analogue which in no way describes all the salient features of the human being and the human nervous system, but it goes further than most models. Bois has challenged theoreticians to improve their theoretical foundations, constantly revising maps to fit the territory.

Metaphorizing places the student researchers directly into the map-making process. Students who learn to recognize metaphors in the theoretical constructs of a variety of disciplines will not only learn to make their own maps, deriving direct benefit from these images, but will also remain free of hypostatization, metaphor fixation, or hardening of the categories.

Trial Run in the Classroom

In the Spring of 1989, I had the opportunity to use my textbook as an ancillary text in my General Semantics 412 class, a senior level course taught at Ambassador College, Pasadena, California. Over one third of the course was devoted to system models and scientific metaphor. Because the class was small, consisting of eight enthusiastic, mature, and productive students, I assigned each student responsibility for discussing one or two content areas from the text. Every Friday we would begin discussing a particular analogue, systematically moving from student to student, each of whom would provide examples from his or her area of specialization.

Momentum and synergy were greatly augmented as the discussion group progressed from a rapid pump-priming recitation of text examples to a creative mixing and matching of models. Many serendipitous insights grew out of the systematic yet free-wheeling cross-pollination. Students expressed gratitude for learning these unexpected insights from such diverse academic areas as music, economics, business, physics, sociology, anthropology or theology. No other course in the entire curriculum could claim such a widely diversified discussion of topics, formulations, and ideas.

Although the academic content areas were assigned according to student preference, most of the students felt that the exercise could have been more meaningful, beneficial, and productive if they had rotated academic disciplines at each analogue level. Others felt that it would be better to maintain a nominal specialization in one content area, but to investigate a second set of content areas, rotating with each change of analogue. Most students liked the practice of systematically switching from divergent (generating many species of analogues) to convergent (applying one analogue to a specific problem) uses of the mental models.

One of the biggest joys I received from the experience was to see the students become increasingly metaphor/analogue conscious, not

only in identifying metaphor, but in analyzing the process by which the images can be isomorphically coupled. Hardly a day goes by in which a student hasn't attempted to read metaphorical significance into incidents such as the space shuttle disaster, Glasnost, Perestroika, the Alaskan oil spill, or cold fusion. It has been my experience that if a student is (1) taught to identify metaphors, (2) taught to generate metaphors, (3) taught to think about his metaphorizing, it makes his thinking more productive and vital. It is my sincere hope that every student will experience the exhilaration of interdisciplinary travel through analogue.

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Metaphor, far from being a decoration that is added to language, purifies it and restores it to its original nature.

Claude Levi-Strauss

I have spoken at length of the close relatedness between the scientist seeing an analogy where nobody saw one before, and the poet's discovery of an original metaphor or simile.... In the scientist's Eureka process two unconnected frames of reference are made to intersect, but the same description may be applied to the poet's trouvaille — the discovery of a felicitous poetic comparison. The difference between them is in the character of the 'frames of reference,' which in the first case are of a more abstract, in the second of a more sensuous nature; and the criteria of their validity differ accordingly. But the difference, as we have seen, is a matter of degrees; and often the two overlap.

Arthur Koestler
The Act of Creation

TO BE OR NOT TO BE:
E-PRIME AS A TOOL FOR CRITICAL THINKING*

D. DAVID BOURLAND, JR.

Ambrose Bierce, in his famous *Devil's Dictionary*, defined logic as "The art of thinking and reasoning in strict accordance with the limitations and incapacities of the human misunderstanding." As we become conscious of our misunderstandings, we improve the quality of our thinking, and most particularly our thinking about thinking, which Richard Paul defines as 'critical thinking.' In this chapter I will describe an offshoot of Korzybski's system (26, 27) known as E-Prime: English without any form of the verb 'to be." The name comes from the equation E' = E - e, where E represents the words of the English language, and e represents the inflected forms of 'to be.'

We have heard of the unfortunate effects produced by the infamous "Person from Porlock" on English Literature. A similarly unknown "Person from Tolland (Connecticut)" produced a more beneficial effect on me when, in 1949, I held a Fellowship for study with Alfred Korzybski at the Institute of General Semantics in Lime Rock, Connecticut. This Person, whose name I can no longer retrieve, wrote to the Institute suggesting that, in view of the problems Korzybski had discussed in connection with the 'is of Identity' and the 'is of Predication,' perhaps we should just abandon all uses of the verb 'to be.' While no one else at the Institute seemed particularly interested in this suggestion, it struck me as having considerable merit, provided one could really do it.

The Institute staff at that time had perhaps reached its apex, consisting of Korzybski, M. Kendig, Charlotte Schuchardt (later Mrs. Allen Walker Read), Ralph Hamilton, Lynn Gates, David Levine and myself. Guthrie Janssen had just finished editing *Selections*

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from Science and Sanity (28) and still lived in the immediate area. The letter from Tolland did not excite anyone else in this collection of critical thinkers, but it gnawed at me. The time fit me just right: I had a paper in preparation for the Third Congress on General Semantics. I decided to revise it once again to see if I could say, and indeed say better, what I wanted to convey without using any form of 'to be.' In the process of this revision, I acquired an intermittent, but severe, headache which lasted for about a week. The final paper had a peculiar clarity, despite the fact that one 'was' crept in. It eventually appeared as reference (3).

Between 1949 and 1964 I used E-Prime in several papers, but did not discuss this matter lest I become regarded as some kind of nut. Finally some close friends convinced me that a wider audience might feel interested in E-Prime. Encouraged particularly by my friend, Charles Chandler of Princeton, N.J., I prepared a brief report that appeared as reference (4). Subsequently two other studies discussed applications to the non-Aristotelian premises and to political documents (5, 7).

In early 1969 the New York Society for General Semantics invited me to give a talk on E-Prime. This I did, trying to do so in E-Prime. By and large I succeeded (some people listened precisely for this — then and now they consist of a sharp, feisty bunch.) Subsequently Kellogg (23) accomplished this and recommends it highly. His excellent *ETC* paper contains many helpful suggestions.

Interest in E-Prime reached a peak in 1969. Due to mention of this oddity in a footnote of a paper by Allen Walker Read, *Time* magazine sent an interviewer to me to discuss E-Prime. A friendly article appeared in the issue of May 23, 1969. Unfortunately, in the process of writing this friendly piece, they attributed to me two quotations of statements I never made: one incredibly awkward, and the other such a gross transgression of E-Prime that it actually made publication at the bottom of a piece in *The New Yorker* magazine. Thanks, *Time!*

Introducing E-Prime

Let us turn now to what we can expect to happen to our writing and talking when we in fact do so in E-Prime.

Depending on exactly how one defines 'word,' most scholars regard the English language as embracing some one to two million 'words,' or lexical items. (Note 1.) In E-Prime one simply does without 20 or so of those lexical items; specifically, the 'to be' family: be, is, am, are, was, were, been, being; plus contractions — 'm, 's, 're; plus various archaic and dialectal forms — e.g., war, wert, beest, amn't, ain't.

While statistically E-Prime only makes trivial changes relative to the English lexicon, it does affect the syntax. Even this effect, however, does not seem as severe as it might appear. This unexpected lack of severity proceeds from the well-known 'richness' of the English language, which provides a wealth of linking verbs (become, seem, appear, verbs related to the senses), apposition, etc., that can take over most of our habitual applications of 'to be.' On the other hand, E-Prime does admittedly entail the necessity of expressing the progressive aspect by using '... continues to ...,' and it makes use of the passive voice difficult or even impossible. (Note 2.)

In marked contrast with the areas of the lexicon and syntax, E-Prime delivers major and unexpected consequences to English semantics.

The E-Prime revision of English, although trivial in some respects, has deep underlying epistemological antecedents and consequences. Critical thinkers have struggled with semantic consequences of the verb 'to be' for hundreds of years. These distinguished persons include Thomas Hobbes (18), Augustus de Morgan (30), Bertrand Russell (34), Alfred North Whitehead (38), George Santayana (35), and Alfred Korzybski (27).

Their concern, and ours as critical thinkers, centers upon two semantic usages of 'to be,' Identity and Predication, that have these general structures:

[1] Noun Phrase$_1$ + TO BE + Noun Phrase$_2$ (Identity)
[2] Noun Phrase$_1$ + TO BE + Adjective Phrase$_1$ (Predication)

where TO BE represents an appropriately inflected form of the verb 'to be.'

Critical thinkers have argued against using statements having the structure of [1] because they immediately produce high order abstractions that lead the user to premature judgments. Consider the following example:

[3] John is a farmer.

The immediate consequence of such an identification at the very least brings about unjustified abbreviation, which can severely interfere with communication. For example, consider the following three sentences about 'John:'

[4] John farms three acres.
[5] John owns and operates a 2,000-acre farm.
[6] John receives $20,000 a year from the government for not growing anything on his farm.

We could even carry this illustration into a different dimension:

[7] John, after living in the city all his life, has just bought a farm.
[8] John grew up on a farm and has farmed there for 61 years.

Despite the fact that [4] through [8] make extremely different statements about 'John,' most English-speaking people feel comfortable making the jump from any one of [4] through [8] to [3]. Critical thinkers trained in general semantics hold that [3] does not represent a valid higher order abstraction which could come from such observations as [4] through [8], but rather a possibly incorrect and certainly inadequate abbreviation of the larger picture.

Of course, due to the uniqueness of structures on the event level and the process character of 'reality,' no structure can have precise identity with another — or even with itself at two different times, for that matter. Hence, we can categorically deny the validity of any Identity relation. And accordingly, any linguistic structure which conveys or assumes an Identity relation does not correspond well with 'reality.' As Korzybski would put it, "The map does not fit the territory."

A decade before Korzybski, George Santayana described those matters somewhat poetically as follows:

> The little word <u>is</u> has its tragedies: it names and identifies different things with the greatest innocence; and yet no two are ever identical, and if therein lies the charm of wedding them and calling them one, therein too lies the danger. Whenever I use the word <u>is</u>, except in sheer tautology, I deeply misuse it; and when I discover my error, the world seems to fall asunder, and the members of my family no longer know one another. (35, p. 123.)

Let us now consider Predication, as illustrated in the following statements:

[9] The earth is flat.
[10] The earth is round (spherical).
[11] the earth is somewhat pear-shaped.

The verb 'to be' carries with it a huge intellectual momentum of completeness, finality, and time independence. Still, each of the statements [9] through [11] does describe the earth adequately for some <u>restricted</u> purposes. This dual condition of adequacy-inadequacy seems characteristic of the Predication usage of 'to be' and provides both its charm and danger.

Early presentations of Korzybski's methodology evidently did not clearly explain the notion of the '<u>is</u> of Predication' despite its importance. Classical logicians have long called statements which

have an 'is of Predication' as the main relational term 'subject-predicate' statements. As Bertrand Russell put it:

> The belief or unconscious conviction that all propositions are of some subject-predicate form — in other words, that every fact consists in some thing having some quality — has rendered most philosophers incapable of giving any account of the world of science and daily life. (34, p. 24)

Korzybski stated the importance of this matter in the following way:

> The subject-predicate form, the 'is' of identity, and the elementalism of the Aristotelian system are perhaps the main semantic factors in need of revision, as they are found to be the foundation of the insufficiency of this system and represent the mechanism of semantic disturbances, making general adjustment and sanity impossible. (27, p. 371)

We may note in passing that the statements of both Russell and Korzybski contain one or more uses of the 'is of Identity.' (See Note 3.)

We can agree, I trust, that the Identity and Predication uses of 'to be' do not reflect factual circumstances in the world as we experience it.

- Everything in the 'real world' changes: sometimes so rapidly that we may not notice the changes directly (as in the case of a table which appears solid), sometimes so slowly that we can (as in the case of a river.)

- Every person, as well as every 'thing' undergoes such changes.

- One particular verb in English — 'to be' — carries with it archaic associations and implications of permanence and static existence that we do not find in the 'real world.'

We have devoted much of the preceding material to a discussion of the epistemological reasons for avoiding the semantic usages of the 'to be' of Identity and Predication. Other usages of that verb exist, of course, including the following:

[12] Auxiliary. (John is reading. Ivan is plotting. The rose is wilting.)

[13] Existence. (I am. Descartes was. You may be, but then again ...)

[14] Location. (John is here. That is neither here nor there.)

I have heard that I. A. Richards has allegedly distinguished some 23 different usages of 'to be,' but I have never seen the paper in question.

For many years, as noted above, several titans of critical thinking have inveighed against the Identity and Predication usages, *while continuing to use them.* Piecemeal attempts to avoid the undesirable usages of 'to be' simply have not worked. E-Prime provides a simple discipline that *does.* Even Korzybski and some of his most prominent students regularly fell into what we might call the 'Is Trap.' I shall give three examples of the 'Is Trap' in action:

- Korzybski. Prior to the advent of E-Prime, Korzybski had more to say about the inherent dangers of the 'to be' of Identity and Predication than any other critical thinker. And yet he himself fell into the 'Is Trap' to the extent of using those two constructions in some 37% of his sentences in *Science and Sanity.*

- Bois. For a number of years the late J. Samuel Bois served as the chief lecturer for the Institute of General Semantics at its annual seminars. Many, including this writer, consider his book, *The Art of Awareness* (2), an excellent introduction to general semantics. And yet Bois used the 'to be' of Identity and Predication in about 42% of his sentences in that text.

- Read. In a discussion of these matters, the noted lexicographer Allen Walker Read agreed that one should "call attention... to the undesirable 'is of identity' and 'is of predication' (as in reference (33)), but still rejected the most positive technique for doing more than just "call attention." Read sought to justify his rejection on the basis of a set of allegations that do not apply to E-Prime (e.g., the latter does not make it impossible to express the progressive aspect, the passive voice, metaphor, adjectives, and appositives). He continues to use the 'is of identity' and the 'is of predication.'

Those three linguistically sensitive critical thinkers seemingly could not avoid the undesirable uses of 'to be,' while allowing themselves the luxury of the other uses. At least, so they wrote — and spoke.

The Impact of E-Prime on Writing and Speaking

In this part of the chapter I will present four of the major consequences of using E-Prime in written and spoken utterances.

a. Vanishing Questions. One simply cannot ask a number of questions — some would say pseudo-questions — that have preoccupied many people. What is man? What is woman? Is it art? What is my destiny? Who am I? Such questions, by virtue of their semantic structure, set the stage for identifications and confusions in orders of abstraction. They tend to lead to discourse in which the likelihood of useful information generation or exchange declines precipitously. One might better ask questions on a lower order of abstraction such as these: What characterizes man or woman uniquely? In what way can I relate to this art form, if any? What can I do now to improve my future possibilities? May I have another drink?

b. Vanishing Internal Instructions. Various schools of psychotherapy have recognized the importance of the silent assumptions

which we hold about the world and ourselves. Other schools, especially the 'rational therapy' practiced by Dr. Albert Ellis, also recognize the importance of what we tell ourselves, vocally and sub-vocally. "Self-suggested nonsense," Dr. Ellis calls this in its undesirable forms. Most of us have encountered people whose life patterns have decayed as they kept repeating to themselves such comments as these: "I <u>am</u> a failure, consequently..." "I <u>am</u> a success, therefore..." "She <u>is</u> a Catholic, so..." "He <u>is</u> a Jew, hence..." "I <u>am</u> a teacher, so what I <u>am</u> doing must <u>be</u> teaching." "Since I <u>am</u> the head of this household..."

c. <u>Abbreviations</u>. Forms of 'to be' encourage and indeed facilitate the making of abbreviated statements that may turn out to convey little or no information, although we often behave as if they do. For example, we often see such empty comments as: "It <u>is</u> clear that..." "Well, business <u>is</u> business." "The problem <u>is</u> just a matter of semantics." Let us discuss that last assertion. While of course most human problems involve important (and usually unexplored because unperceived) semantic issues, these issues do not evaporate just because someone has labelled them thusly. Some people use "It<u>s</u> just semantics" as an analysis stopper. One might productively respond to such a comment by pointing out, "Certainly; at least in part. Now let's try to clarify some of those semantic problems."

Confusion due to improperly abbreviating with 'to be' even occurs in primary schools. All too frequently we still hear teachers insisting that children drill in arithmetic by saying "One plus one <u>is</u> two; one plus two <u>is</u> three; etc." The perfectly correct mathematical expression 'equals' certainly need have no more inherent mystery for the young than 'plus.' The unnecessary use of <u>is</u> in this context may have some responsibility for the difficulties some children experience with fractions. They can readily see the difference between 1/3 and 2/6, say. The first fraction may <u>equal</u> the second, but obviously some trouble could arise for those taught to translate '=' as 'is.'

d. <u>Return of the Role Players</u>. As mentioned above, E-Prime makes use of the passive voice somewhat difficult. One may have to resort to constructions with the somewhat scruffy auxiliary verb

'to get' as in "The work got done." Rather than a drawback, this consists of one of the greatest contributions of E-Prime. This facet of E-Prime forces the user to bring the role players into explicit prominence or to indicate his ignorance of them. For example, many writers of technical and scientific papers forget that 'objectivity' resides in the *persons* conducting the various experiments, etc., rather than in the passive forms used in reporting the results. I know of two instances in which scientists applied E-Prime to their complete report because this technique actually forced them to make explicit some important early details. One instance involved the failure of a sensor on a satellite, and the other concerned the fact that contractor personnel did not switch on a certain antenna. In both instances early versions of the reports in question said something like, "The data were not available." Subsequent digging for the role players brought useful information to light.

"Say That in E-Prime"

E-Prime has come into a certain amount of criticism due to the fact that some, in the first blush of enthusiasm, have seemed to claim too much for the practice of writing and speaking without using any form of 'to be.' The use of E-Prime does not guarantee, in itself, that the resulting material or utterance will sparkle with vitality and validity. Using E-Prime *does* have the effect of encouraging the explicit recognition that somebody made the given assertion. It also tends to lower the order of abstraction which may produce clearer, easier-to-understand material.

But make no mistake: one can reflect his bigotry in E-Prime; one can make invalid (or worse, partially valid) statements in E-Prime; and one can make cynical, self-serving statements in E-Prime. Before giving examples of what one might call "E-Prime Gone Wrong", let us consider an aspect of the matter of 'meaning' that becomes involved here.

At parlor-trick time, occasionally one encounters a person who challenges the E-Primer to "Say that in E-Prime." I try to resist such games because, in point of fact, one *cannot* take a statement or longer body of material and, recasting it in E-Prime, say "the *same* thing." Sure, you can launder the 'to be's' out of the original material. The E-Prime version will probably sound less pompous, perhaps sound more pedestrian, but to some extent the original 'meaning' will have suffered some perturbation.

Let us now discuss the results of laundering material in a variety of contexts, beginning with the standard illustration of the problems with the 'is of Predication.'

A "Classical Example"

The kind of meaning perturbation just described applies even to the overworked, standard example of problems associated with:

[15] The rose is red.

Korzybski liked to point out in his seminars that Statement [15] "Falsifies everything we know about the world and the human nervous system," since it allocates the 'redness' only to the rose and leaves out of consideration the key role played by the human nervous system. Korzybski suggested that we might more appropriately say:

[16] I see the rose as red.

[17] The rose looks red to me.

[18] The rose looks grey to me and some other color-blind people.

One might even encounter:

[19] as a consequence of the interaction, indeed the transaction, between the light reflected by the rose and the processes of my nervous system, various non-verbal perceptions that I generate may stimulate an abstraction on the symbolic level such as 'red' or 'grey' or something else.

I admit that Statement [19] has associated with it a very low probability — probably restricted to those the late Harry Holtzman referred to as "the newly semantic."

My main point consists of this: none of the Statements [16] through [19] 'means' the *same* as Statement [15]. Korzybski and other teachers of general semantics have long hoped that, at about this point, their students would clap hand to brow and say, "Gloriosky, Zero, if trivially simple statements like [15] can generate complexity like this upon analysis, maybe I should stop using that old 'is of Predication.'"

Other Examples

I will present three examples of 'laundering:' an anecdote, a short instance, and a longer one. Please note that all examples come from the 'real world.' Some linguists go overboard contriving their own examples to illustrate dubious points.

a. Anecdote. Some thirty years ago some of my associates in an operations research firm had spent a lot of time writing and polishing and re-writing and re-polishing a report that they could not seem to bring to a satisfactory completion. Then C. H. Morgan volunteered to re-write the report in E-Prime. After he had done so, it became obvious why the report had seemed unsatisfactory: the usual linguistic forms had obscured the shallowness of the analysis and the inadequacies in the discussion of results. This made it comparatively simple for Morgan and others to proceed to produce a sounder report.

b. Short Example. I have had trouble locating satisfactory sources of really vile material to 'launder.' I would not touch religious writing for this purpose, for such would unnecessarily affront some folks, no matter what the source of the religious writing. The writings of sexists — both male and female — also seem more like trivial stereotyping than efforts to communicate, except to the claque. I also had to reject as examples the writings of the hospitalized 'insane' at this time, since that kind of material merits extensive treatment in its own right, probably in collaboration with one or more psychiatrists.

Germany's Third Reich offers a quotation that seems vile enough for anybody. In his diary for February 5, 1939, Joseph Goebbels stated,

> [20] The Jew is a waste product. (From the translation by Taylor (37)). Notice the externalization of the insult. To launder Statement [20] somewhat, we could produce:
>
> [21] The Nazis regard the Jew as a waste product.

While Statement [21] still seems contemptible, notice the slight improvements due to the introduction of the role players. Furthermore, while we could reasonably, even pyrotechnically disagree with Statement [20], Statement [21] seems quite valid. Wrong-headed at its foundation, distressing perhaps, but correct. What people formerly called 'true.'

c. Longer Example. In looking for a 'real world' example of arch-cynicism, given the constraints discussed in (b) above, I finally turned to that every-day whipping boy, Machiavelli. I somewhat arbitrarily selected the opening material of Chapter XVIII of *The Prince* for study. Table I contains a quotation of the material studied, for comparison with Table II. The latter gives an E-Prime laundered version. I find the version contained in Table II more readily understandable than that of Table I, but with plenty of cynicism intact.

TABLE I
ORIGINAL VERSION
EXCERPT FROM CHAPTER XVIII OF *THE PRINCE*
"CONCERNING THE WAY IN WHICH
PRINCES SHOULD KEEP FAITH"

Everyone admits how praiseworthy it is in a prince to keep faith, and to live with integrity and not with craft. Nevertheless our experience has been that those princes who have done great things have held good faith of little account, and have known how to circumvent the intellect of men by craft, and in the end have overcome those who have relied on their word. You must know there are two ways of contesting, the one by the law, the other by force; the first method is proper to men, the second to beasts; but because the first is frequently no sufficient, it is necessary to have recourse to the second. Therefore, it is necessary for a prince to understand how to avail himself of the beast and the man. This has been figuratively taught to princes by ancient writers, who describe how Achilles and many other princes of old were given to the Centaur Chiron to nurse, who brought them up in his discipline; which means solely that, as they had for a teacher who was half beast and half man, so it is necessary for a prince to know how to make use of both natures, and that one without the other is not durable. A prince, therefore, being compelled knowingly to adopt the beast, ought to choose the fox and lion; because the lion cannot defend himself against snares and the fox cannot defend himself against wolves. Therefore, it is necessary to be a fox to discover the snares and a lion to terrify the wolves. Those who rely simply on the lion do no understand what they are about. Therefore a wise lord cannot, nor ought he to, keep faith when such observance may be turned against him, and when the reasons that caused him to pledge it exist on longer. If men were entirely good this precept would not hold, but because they are bad, and will not keep faith with you, you too are not bound to observe it with them. Nor will there ever be wanting to a prince legitimate reasons to excuse this nonobservance. Of this endless modern examples could be given, showing how many treaties and engagements have been made void and of no effect through the faithlessness of princes; and he who has known best how to employ the fox has succeeded best.

TABLE II
E-PRIME VERSION
LAUNDERED EXCERPT FROM
CHAPTER XVIII OF *THE PRINCE*
"CONCERNING THE WAY IN WHICH
PRINCES SHOULD KEEP FAITH"

Every one admits that praiseworthy princes should keep faith, and live with integrity and not with craft. Nevertheless, in our experience those princes who have done great things have held good faith of little account, and have known how to circumvent the intellect of men by craft, and in the end have overcome those who have relied on their word. You must know that there exist two ways of contesting, the one by the law, the other by force; one may properly use the first method for men, the second for beasts; but because the first frequently does not suffice, one must necessarily have recourse to the second from time to time. Therefore a prince must understand how to avail himself both of the beast and of the man. Ancient writers have taught this point figuratively to princes. They describe how the Centaur Chiron, given Achilles and many other princes of old to train, brought them up in his discipline; which means solely that, as they had a half-man, half-beast for a teacher, he had the capability of teaching the princes how to make use of both natures, for neither one without the other will suffice. If a prince becomes compelled knowingly to adopt the beast, he ought to choose the fox and the lion; because the lion cannot defend himself against snares, and the fox cannot defend himself against wolves. Therefore one must act like a fox to discover the snares, and like a lion to terrify the wolves. Those who rely solely on the lion do not understand the true nature of their enterprise. Therefore a wise lord cannot, nor ought he to, keep faith when others could turn such observance against him, and when the reasons that caused him to pledge it exist no longer. If men behaved properly this precept would not hold, but because they normally behave badly and they will not keep faith with you, you too should not feel bound to observe it with them. Nor will a prince ever lack legitimate reasons to excuse this nonobservance. One could give endless modern examples of this, showing how princes have abrogated many treaties and engagements through their faithlessness; and he who has known best how to employ the fox succeeded best.

The preceding three examples illustrate adequately that, operating within the bounds of E-Prime one can still produce material that could seem shallow, bigoted, or cynical to others. On the other hand, in my opinion E-Prime does not constitute a threat that advertisers or others could use as a clever way to get mendacious, self-serving messages across to a gullible public. If anything, the increased clarity due to E-Prime would tend to expose such chicanery rather rapidly.

Aphorisms

A friend suggested to me that aphorisms usually bristle with forms of 'to be,' and hence they might provide an interesting grist for E-Prime laundering. Consulting reference [1], I found that some 60% of them employed one or more uses of the '<u>is</u> of Identity' or '<u>is</u> of Predication.' Table III contains the results of laundering ten aphorisms from reference (1). I hold no particular brief for the E-Prime versions of the aphorisms. One <u>can</u> do it; but afterwards, what do you have? If the reader would like to try his or her hand at this sort of thing, I will give two interesting cases below. In addition, you can check on how much you can improve on my versions in Table III.

[22] The credulity of love is the most fundamental source of authority. (Freud)

[23] Whatever you say a thing is, well, it is not; for the word is not the thing. (Korzybski)

I would have laundered the aphorism given in [22], except that I simply do not understand what Freud wanted to say. If you do, and can launder it, please keep the information to yourself.

The Korzybskian aphorism merits some discussion. Korzybski liked to spring this one even on people comparatively untrained in his system, for the shock value. Of course, this sort of ponderous

TABLE III
STUDY OF APHORISMS*

1.	a.	The difference between journalism and literature is that journalism is unreadable and literature is not read. (Wilde)
	b.	We can define the difference between journalism and literature in this way: we regard journalism as unreadable, while we simply do not read literature.
2.	a.	Whatever is not nailed down is mine. Whatever I can pry loose is not nailed down (Collis P. Huntington)
	b.	Anything not nailed down belongs to me. Whatever I can pry loose has become no longer nailed down.
3.	a.	The best qualification of a prophet is to have a good memory. (Halifax)
	b.	In order to become a prophet one must have a good memory.
4.	a.	The handwriting on the wall may be a forgery. (Hodgson)
	b.	Perhaps a forger produced the handwriting on the wall.
5.	a.	There is properly no history, only biography. (Emerson)
	b.	History does not exist, only interlocking biographies.
6.	a.	To be engaged in opposing wrong affords but a slender guarantee for being right. (Gladstone)
	b.	The simple fact that you oppose wrong does not prove the correctness of your position.
7.	a.	For a man to achieve all that is demanded of him, he must regard himself as greater than he is. (Goethe)
	b.	For a man to achieve all that people demand of him, he must have an exaggerated picture of himself.
8.	a.	Diplomacy is to do and say the nastiest thing in the nicest way. [Goldberg)
	b.	Diplomacy makes us do and say the nastiest thing in the nicest way.
9.	a.	A practical man is a man who practices the errors of his forefathers. (Disraeli)
	b.	A practical man practices the errors of his forefathers.
10.	a.	The hardest thing is writing a recommendation for someone you know. (Kin Hubbard)
	b.	The better you know someone, the harder becomes the task of writing a recommendation for him.

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* Source: Reference (1). In each instance, (a) gives the original form of the aphorism, and (b) provides an E-Prime analogy.

playfulness goes over better in some circles than others. One can sort out the issues alluded to in [23] with the aid of a Structural Differential, but I fear that such clarification did not always happen. I offer [24] as a 'laundered' version of [23]:

> [24] One must differentiate carefully between structures on the Object Level ('perceived reality') and related structures on the Symbolic Level.

You may wish to relate this to material in the Chapter "From Electrons to Ideas: The Structural Differential," by Robert Potter.

This concludes my enquiry into E-Prime Gone Bad. Enough already.

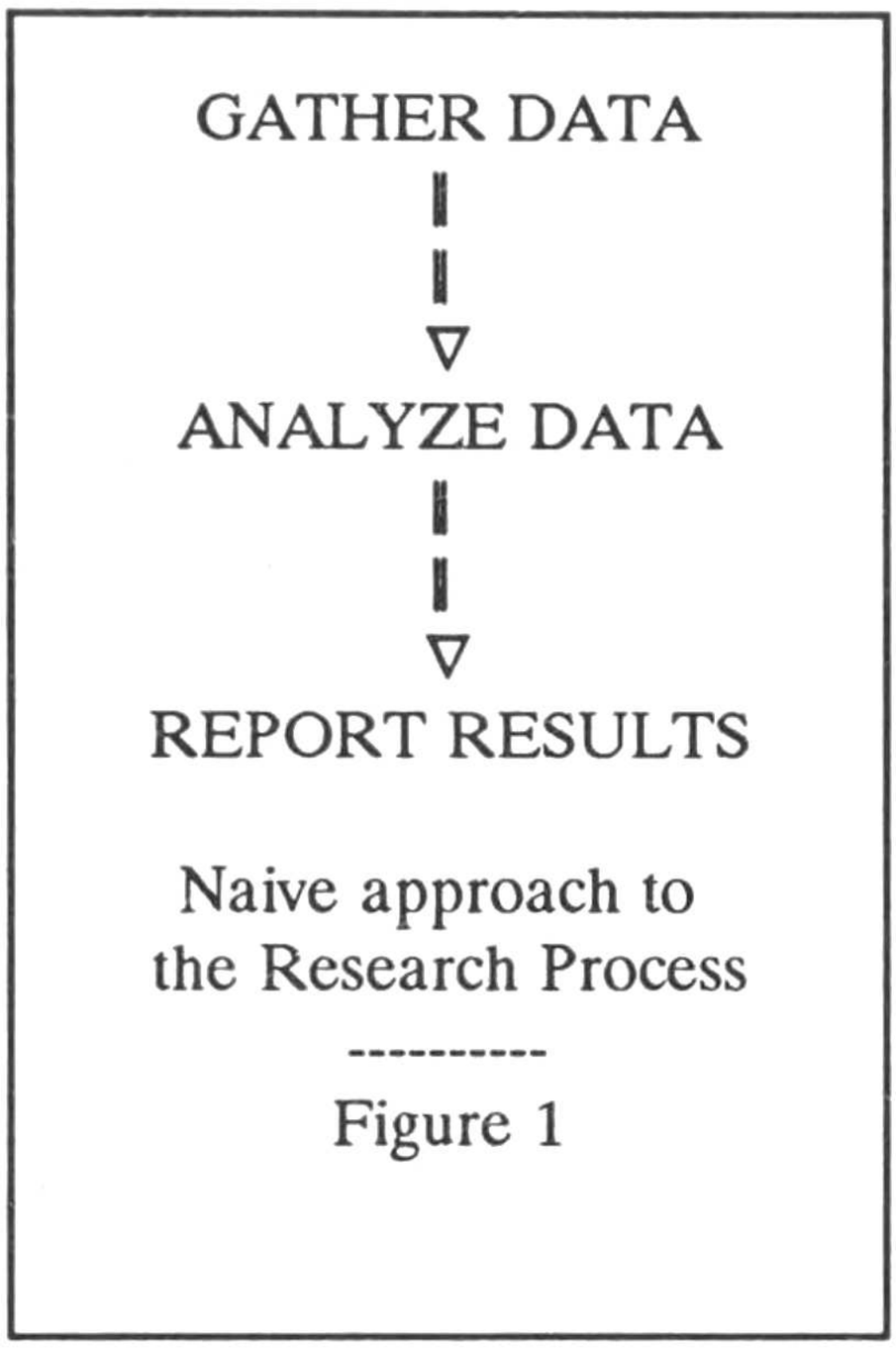
E-Prime Versus Science and Art

Although one might have trouble believing it, I have heard E-Prime criticized on the basis that (i) it could have dire effects on the practice of science, or even (ii) it could stunt literature, poetry, etc.

More precisely, a confused critic allegedly said, "How could you do science with E-Prime? You couldn't say what something <u>is</u>." Of course, for the best refutation of that position, one merely needs to cite more or less extensive reports that have already appeared in E-Prime. They range from articles and dissertations in astrophysics (36), to biology (22, 24, 25), to psychology (31), even to linguistics (6). The latter, incidentally, I include despite the observation that on some faculties they have trouble deciding whether to consider linguistics a "soft science" or a "hard humanity."

And yet... and yet the critic's question also reflects the confusion felt by many concerning the nature of scientific endeavor. I believe that most students of the sciences nowadays take the position that, as soon as one departs from the sheer taxonometric phase of a science, one tends increasingly to see a focus on investigations of the

variation of some variables with others, leading iteratively to the development of theories that contain key points for experimental verification.



Naive approach to
the Research Process

Figure 1

Let us look in a somewhat detailed way at the research process, which lies at the heart of any scientific effort. It might surprise you to know that some people involved in scientific or technical activities believe that, basically, the research process amounts to little more than that shown in Figure 1. The fallacy embedded in Figure 1 consists of the assumption that one can take useful data without having a theory to indicate what data to collect. I have seen this in the case of oceanography, wherein some laboratories have spent considerable money on the collection of vast amounts of largely meaningless data. They had embarked prematurely on an extensive data-gathering series of programs.

Figure 2 illustrates the stages and feedback loops that I regard as most important in the research process (8). The potentially cyclic paths in Figure 2 labelled A1 to A4 represent feed-back paths important when conducting some given research project. The path labeled B shows the relevance of one project to subsequent ones performed by the same individual or group, while path C represents the more formal process whereby one affects other research workers (and conversely).

Now about art — remember that the E-Prime revision began as an epistemological consequence of Korzybski's appreciation of the everyday consequences of science. His focus zeroed in on how those scientific and psychiatric insights could assist us in attaining an

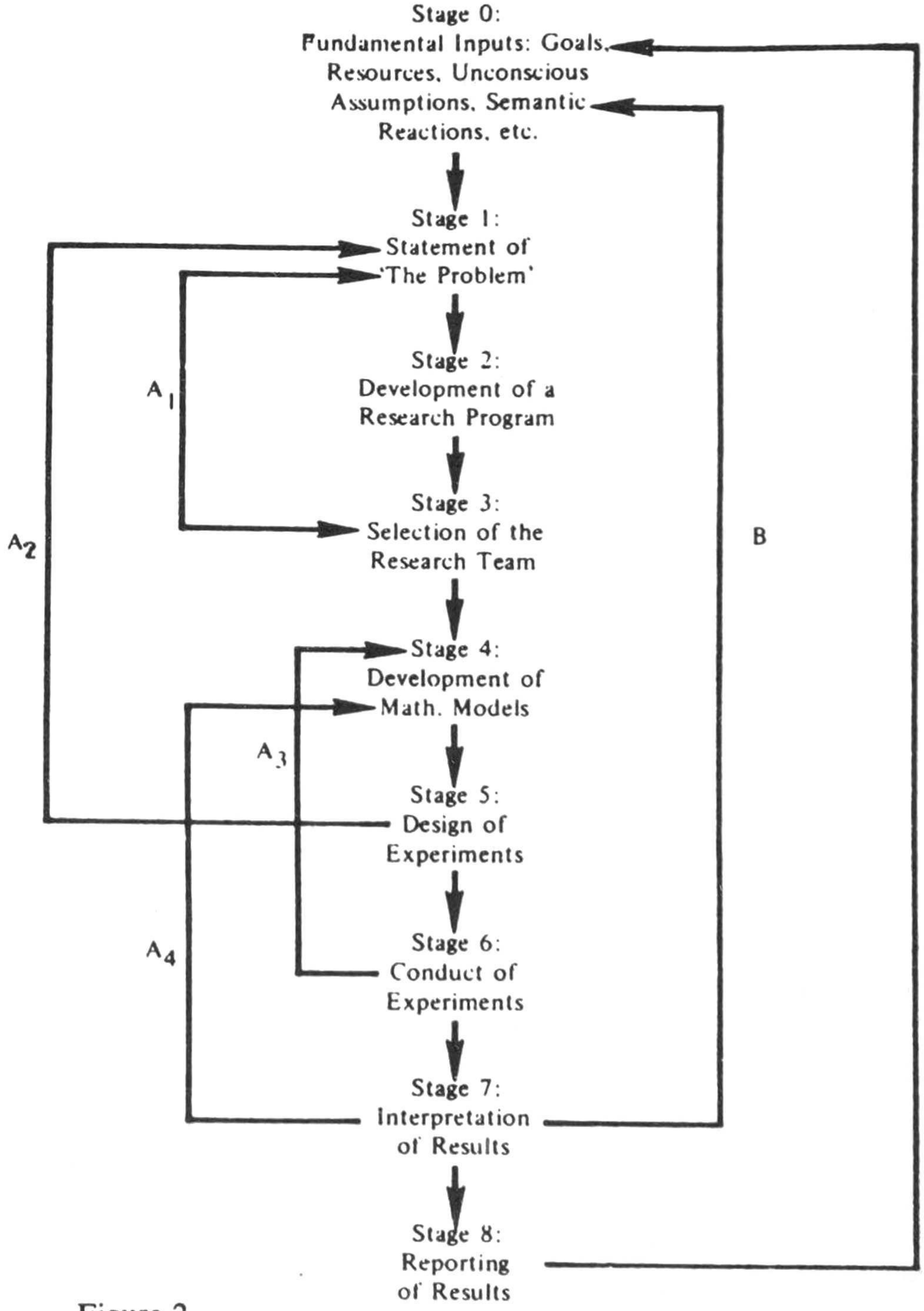


Figure 2

Nine Significant Stages in a Typical Research Process (0-8)

increasingly 'sane' approach to the problems we all encounter in our lives, hence the title of his major work, *Science and Sanity.* E-Prime... English without the verb 'to be'... listen carefully.... Can anyone hear in the preceding sentence any suggestion that we 'should' re-write Shakespeare, the Holy Bible, the Declaration of Independence, etc., in E-Prime? I have certainly never made such a suggestion, although I did provide as an illustration a beginning of the Declaration re-written in E-Prime.

And yet... and yet, who knows? Perhaps E-Prime does have a serious contribution to make in novels, poetry, etc. Let us recognize that E-Prime does not amount to a debased, hand-tied-behind-the-back version of English. It not-so-simply removes a smear on the windshield of language. Perhaps the improved clarity will help those who seek to contribute to the literary arts. I believe those with the ability, ambition, and background should give this model a spin, kick its tires, etc. I leave this fascinating challenge to those who can conjugate the artistic possibilities of E-Prime. I would like to help them but, as the late Harry Holtzman put it, at this point I do not have that many good months left.

Politics and Language

In the years immediately following World War I, Alfred Korzybski observed the stark differences between the consequences of engineering and scientific activity and the fruits of political activity. He pointed out that, when engineers build a bridge it normally functions as designed. But when politicians 'build' a treaty or government, it usually collapses amid great human suffering.

Korzybski's analysis led him to conclude that the fundamental factor responsible for that discrepancy in performance consists of the structure of the languages used by those who design bridges and those who design governments. The engineers and scientists use a language (mathematics) which has a structure similar to that of the bridges, hence the language produces predictability. However, the politicians normally employ a language of archaic structure that uses

static terminology in describing dynamic human socio-economic issues. As Korzybski pointed out, to the extent that a treaty, constitution, etc., incorporates this kind of static-dynamic discrepancy, one may expect undesirable and unstable consequences.

To put this somewhat differently, Korzybski asserted in his books that dynamic social institutions, if based upon static premises, must ultimately collapse. And if we inquire into this matter semantically, we find that the use of the verb 'to be' constitutes the main source of static premises and assertions in ordinary English.

Recognizing the insidious role which 'to be' theoretically may perform in socio-political contexts, I analyzed several important, basic political documents. The purpose consisted of determining to what extent the language in the documents exhibited a static character, as indicated by their reliance on the '<u>is</u> of Identity' and '<u>is</u> of Predication.'

I chose the following political documents for study:

a. The Constitution of the United States of America.
b. The Communist Manifesto.
c. Machiavelli's *The Prince.*
d. Robert Welch's *The Blue Book.*
e. Aristotle's *Politics.*

Table IV shows the results of the analysis of sentences in the documents noted above. Some distortion in the results may exist, due to the fact that the documents by Machiavelli and Artistotle exist as English translations. However, the original languages in both cases belong to the Indo-European family, so the distortion probably does not amount to too much. Marx and Engels allegedly wrote the "Communist Manifesto" in several 'original' languages, including English. Engels supposedly edited the English version which I analyzed.

In my assessment, the results given in Table IV, ranked in accordance with the increasing appearance of the uses of Identity

and Predication, also correlate precisely with the great flexibility and power of our Constitution to the sterility of Mr. Welch's nightmare, and the rigid dogmatism of Aristotle. I submit that these results give quantitative substantiation for Korzybski's thesis.

TABLE IV
POLITICAL DOCUMENT STUDY

Document	Sentences in Sample	Per cent of Sentences with one or more uses of Identification or Predication
Constitution of U.S.A.		
a. Main Body[a]	99[b]	20.2
b. Complete	166[b]	21.6
Communist Manifesto	444[b]	26.2
The Blue Book	207	48.8
The Prince	175	53.6
Politics	188	60.1

[a]Exclusive of Amendments

[b]Complete Document, not a sample.

Concluding Remarks

Apart from epistemological considerations, E-Prime can assist the user in obtaining a kind of vigorous clarity that increasing numbers of people have found worthwhile. Of course, I know of only some of those who have found E-Prime useful in their writing and speaking. E-Prime has found applications in two doctoral dissertations — one in astrophysics (by Dr. D. A. Schwartz in 1968) (36), and one in psychology (by Dr. R. H. Moore in 1977) (31). In addition, we have had a licenciatura thesis in linguistics (mine in 1974) (6), a master's thesis in Biblical studies (by B. L. Cannon in 1987) (10), and a multi-volume research report by the U. S. Naval Air Systems Center (Project IMP in 1971).

Of course, it pleased me greatly to learn that the noted psychotherapist, Dr. Albert Ellis, thought enough of the benefits of E-Prime that he has re-written five of his books in this manner (12-16).

Scientific papers by Dr. E. W. Kellogg, III, which show "E-Prime in action" have appeared in *Nature* (25), *The Journal of Bioelectricity* (22), and *The Journal of Gerontology* (24). Further applications have appeared in various places by C. A. Hilgartner, M.D. (17), K. L. Ruskin, M.D. (9), Dr. Ruth Ralph (32), Elaine C. Johnson (20), Paul D. Johnston (21), Charles H. Morgan, and T. J. Hefferon. (See Note 4).

The diversity of applications described above testifies to the generality and utility of E-Prime.

I offer E-Prime to those interested in critical thinking as an easily teachable technique that has immediate benefits. In writing and talking it provides a method for materially reducing "the human misunderstanding." As the current ad for Nike Athletic puts it, "Just do it."

NOTES

1. This conventional position ignores the names of the integers after some arbitrary cut-off point. Otherwise, we would have to say trivially that most modern languages contain at least a denumerably infinite number of words.

2. The comparatively minor syntactic consequences of E-Prime reflect the same linguistic functions operating that account for the fact that some natural languages lack a verb that corresponds exactly to 'to be,' including Russian, Hungarian, and Mandarin at least. It seems interesting to note that the speakers of those languages alone account for about 20% of the world's population.

3. The lack of an adequate treatment of the 'is of Predication' has led to some unfortunate confusion. The 'is of Predication' statement has the basic structure given in (2) above. In the early days of the transformational approach to syntax, Chomsky (8) gave the following re-write rule for a sentence (S):

   (N1) S → NP + VP,

   where NP represents noun phrase, and VP represents verb phrase. In pre-Bloomfieldian 'traditional' grammars linguists called the NP of (N1) the 'subject,' and the VP of (N1) the 'predicate' (e.g., Jesperson (19, p. 97.)) The slight difference in terminology and the great difference in significance between the philosophical subject-predicate and the linguistic subject + predicate provided the raw material for problems. For more on this matter see reference (29, P. 121).

4. I wish to express my appreciation for the editorial suggestions offered by Russell Joyner and Dr. E. W. Kellogg, III.

Editor's Note: In my classes at the University of Wisconsin-Milwaukee I used E-Prime as an effective teaching device. I asked students in my general semantics classes, during the first week of class, to write a 'self-image sketch.' A little later in the course I asked them to rewrite that sketch in E-Prime. They not only learned about the implications of language structure but about themselves as they changed 'I am' statements (I am shy. I am not an artist. I am poor at math.) to action statements telling what they do or do not do. One student said, "What I am seems so permanent. What I do changes from moment to moment."

Rewriting in E-Prime provided practice in using a variety of sentence structures. Most of the students had been advised by English or Journalism teachers to "use action verbs" and" avoid the passive voice." This assignment required them to heed that advice.

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D. David Bourland, Jr., graduated from Culver Military Academy (1946), Harvard College (A.B. Mathematics, 1951), Harvard Graduate School of Business Administration (M.B.A. 1953) and Universidad de Costa Rica (Licenciatura in English Linguistics, 1973). Fellowship for study at the Institute of General Semantics, 1949-50. Attended Institute Seminars in 1947, 1948, 1949, and 1968. Editor, *General Semantics Bulletin*, 1964-1970. Trustee of the Institute of General Semantics, 1964-1989. Served on the Staff, Commander Naval Forces Far East as a Lieutenant, Junior Grade, 1953-1955. Worked in the field of naval operations research, 1955-1971. Taught at the Universidad de Costa Rica 1971-1980; retired as Associate Professor of Linguistics.

Our censure should be reserved for those who would close all doors but one. The surest way to lose truth is to pretend that one already wholly possesses it. For narrow systems dogmatically held tend to trivialize the mentality of the investigator and of his students.... Dogmatism makes for scientific anemia.

Gordon W. Allport
Becoming

SEVEN PHASES IN LEARNING GENERAL SEMANTICS

CATHERINE MINTEER

(Editor's note: Catherine Minteer was an outstanding teacher of general semantics at the seventh and eighth grade levels, then became a teacher of teachers until her death in 1985. Several years ago I heard her describe "phases in learning general semantics" based on research with seventh and eighth grade classes. At the time I was teaching university classes and adult evening extension classes. I was struck by the similarity in the 'phases' she described and the 'phases' I observed in my classes. The material presented here is a slightly edited version of her handout material.)

In a five-year study of twenty groups of students we found a pattern in their reports when they were asked to write about their weekly lessons. The kinds of reports they made could easily be placed into groups as they continued their study.

These groups were called 'phases' because a student moves from one to another. Of course, not all students moved to the later phases. A student may at times show characteristics of an earlier phase after operating in a later phase, but the overall pattern was sequential.

Phase 1

Is able to repeat or explain most of the lesson as it was presented to him.

May give a detailed account of class activity or discussion.

Fails to mention any applications of the lesson that he has discovered for himself.

Fails to go beyond the boundaries set by the instructor.

Does little questioning.

(The typical parroting back of information we find in many classes.)

Phase 2

May discover some illustrations or applications of the lesson. Looks to TV, newspapers, films, and everyday situations for illustrations.

Probably includes quite a bit of trivia, such as: "My parents won't listen to me." "The newscaster said, 'All Russians;' not all Russians are the same, so he was wrong."

May try to teach the lessons to *others*; point our *their* need for improvement.

May use his new information as a weapon with which to win an argument or impress someone. "If you knew general semantics you wouldn't say that."

Is likely to ask, "How can I get other people to know this? What's the use of knowing this stuff if your friends don't?"

(Testing the possible usefulness of this new knowledge.)

Phase 3

Begins to describe the *mechanisms* at work in some language misuses. Tries to analyze how they work in relation to the principle he has been studying.

May make other misevaluations in talking about the one he is analyzing. "I made an inference. I'll never do that again!"

Points out one misevaluation, one cause, one cure for it.

(Investigating in a limited area.)

Phase 4

Occasionally finds examples of *his own* misevaluation.

Shows some awareness of his need for more effective use of language.

Remembers *after* he has talked or acted.

May promise immediate, entire correction. Assumes that now that he has seen his error, it will be corrected automatically.

Or he may become discouraged by his errors and become defensive. "So I see what's wrong, but that's the way I am." "Everyone makes mistakes. You can't watch every word you say."

I consider this a crucial phase because the learner may become aggressive, rejecting the lessons or teacher. He complains, "All this stuff is a waste of time. We could be doing something useful."

He is likely to need encouragement and reassurance to go on working.

(Seems to be testing his ability to persist in spite of the difficulties involved.)

Phase 5

Recognizes some of his more effective uses of language.

Makes occasional, self-conscious efforts to correct self.

Remembers *before* he talks or acts.

Plans to avoid specific errors in the future.

Becomes more speculative. Weighs choices. Slows down responses.

Is likely to complain that his verbal output is decreasing. "I'm getting so I can't say anything without wondering if I'm making a mistake."

Verbal output may decrease, but it becomes more organized.

(Putting specific learning to work.)

Phase 6

Begins to detect *patterns* in his language behavior.

Sees more factors in a behavior problem.

Plans some experiments in self-correction.

Seems to sense relationships to his other learnings. Comments, "This is what we are learning in mathematics, music, science, etc." May begin to inquire about theories that have not been presented to him yet.

Observes in wider areas and in more depth.

Questions more.

Proceeds to study and investigate on his own.

(Unification of knowledge. Motivated learning.)

Phase 7

(Based on written reports *and* changes in behavior that can be observed.)

Displays some new *habits* in dealing with everyday problems.

Shows more self-direction. Shows that he is forming standards of his own.

Less reliance on authority, but also more consideration for authority — looks for reasons.

Shows more humor and relaxation in dealing with language, situations, and people.

Shows more awareness of freedom to make choices.

Shows more originality and creativeness.

Displays more ease, confidence and competence in communicating.

(The operational level.)

Catherine Minteer was noted for her great skill in working with students and communicating the insights of general semantics. She was the author of *Words and What They Do To You*, the most widely used of all teaching manuals for introducing general semantics at the junior and senior high school levels, and *Understanding in a World of Words*, a text for junior and senior high school students, filled with examples, applications and exercises. "In this book," she wrote, "you will be asked to explore language habits using the methods you learned in science classes: you question, you observe carefully, you test and retest, and you draw conclusions that are open to continuing investigations."

We begin with the hypothesis that any subject can be taught effectively in some intellectually honest form to any child at any stage of development. It is a bold hypothesis and an essential one in thinking about the nature of a curriculum. No evidence exists to contradict it; considerable evidence is being amassed that supports it.

Jerome S. Bruner
The Process of Education

The beneficial results which are to be expected may be found in better scholarship, more interest in studies, improved character, higher multi-ordinal intelligence, and a better general adjustment.... But when teachers of all subjects acquire consciousness of abstracting themselves, they will probably discover new means and methods of conveying more simply and more effectively what they wish to convey to their pupils.

Alfred Korzybski
Science and Sanity

FROM ELECTRONS TO IDEAS: THE STRUCTURAL DIFFERENTIAL*

ROBERT R. POTTER

Strange Voices and Five-Dollar Bills

Awareness of the process of abstraction is the key to semantic sanity. It will take some effort on your part. First, we need to pull together some of the knowledge we have gained so far. Try to do this for yourself by thinking about the following semantic misevaluations or mistakes. Each of the accounts is true, and each can be explained in semantic terms.

1. A man sat alone in his bleak room in a mental hospital. He (thought he) was conversing with Dean Martin. An attendant strolled in and gently tried to kid the man: "I've told you a thousand times that you're not hearing the voice of Dean Martin".

   "Of course I am," snapped the man. "Don't you think that Dean Martin, of all people, has a *voice*?"

2. A young woman suffered badly from a form of hay fever. She was particularly allergic to roses. One day she entered a room and (thought she) saw a large vase of roses on a table. Immediately she started to sniff and sneeze. This was strange, for the objects in the vase were *paper roses.*

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* Reprinted from *Making Sense: Exploring General Semantics and Critical Thinking* by Robert Potter, by permission of the Globe Book Company, Inc. The book, written as a high school text, includes a number of visual aids, reviews of key points, and "Thinking it through" exercises.

3. A little girl from the city visited a farm for the first time. She had come at just the right hour, the farmer announced. He took her out to the barn to see some baby chicks hatching from eggs under a mother hen. The little girl watched in silence a few minutes. "Those are not eggs," she told the farmer. "Eggs are what my mommy takes out of the 'frigerator."

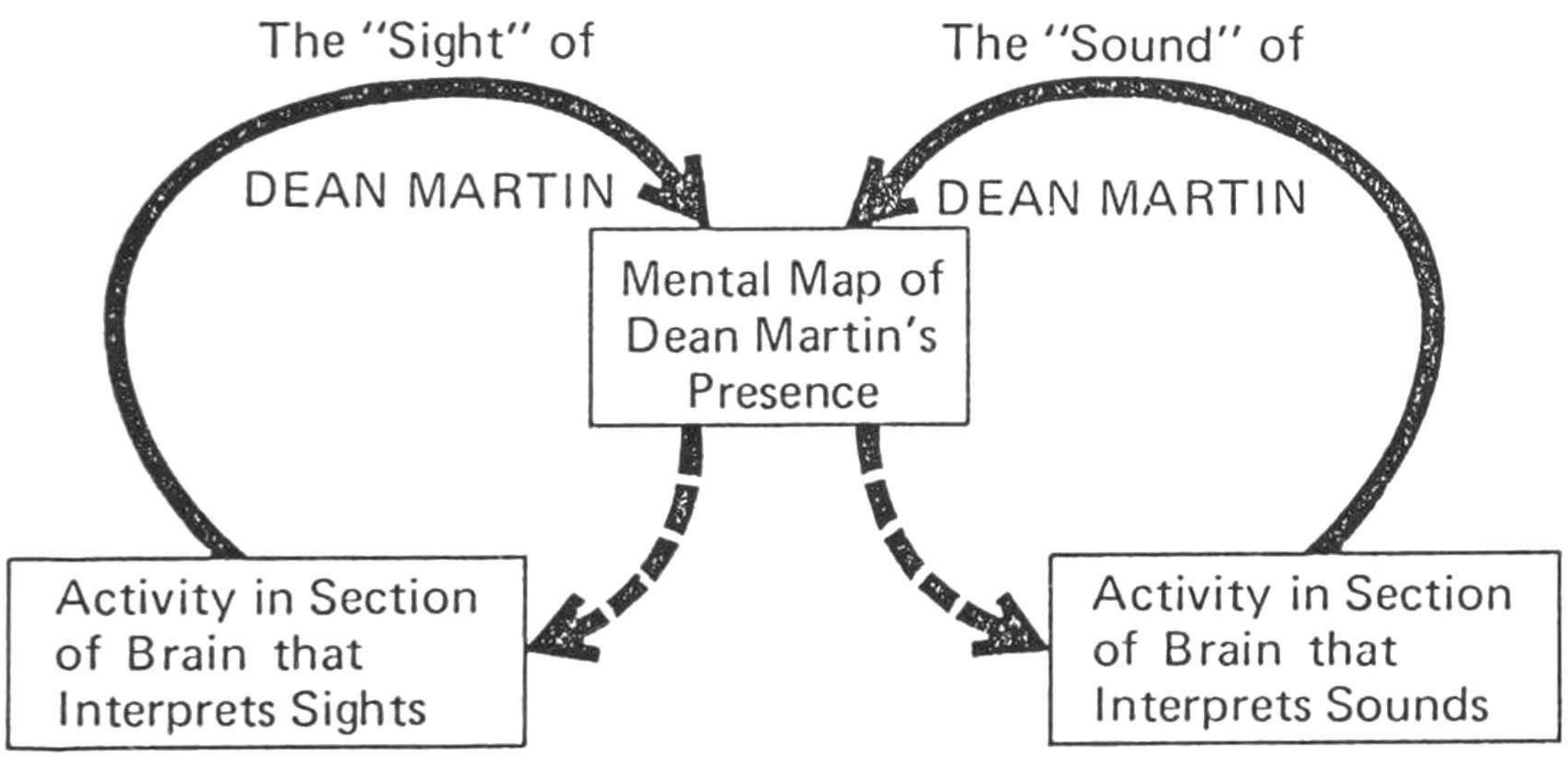
4. Several years ago a man and his wife conducted a costly experiment to find who are more honest, men or women. They started with two hundred $5.00 bills. One hundred of these bills were placed in stamped, unsealed envelopes addressed to the husband. They were accompanied by a short note from an imaginary friend: "Thanks for lending me this last Saturday. I was in a jam, and you really helped me out." The other hundred bills, with similar notes, were also placed in envelopes but addressed to the wife. Then the couple visited a hundred gas stations. The man dropped his envelopes in men's rooms; the wife left hers "accidentally" in ladies' rooms. In the days that followed, many of the man's envelopes came back in the mail. Few of the wife's were returned. When the experiment was published in a national magazine, most readers concluded that men are more honest than women.

Pulling the Picture Together

We should have enough semantic skill to explain these four cases. We understand now that the only world we know — the only world we can ever know — is the world that exists in our heads. This world is made up of *patterns of events* in the human nervous system. It is an *intensional* world of *mental maps* that represent — correctly or incorrectly — the actual *territories* around us. We can also call these maps *verbal maps* because many of them are provided for us by the words we use. (Anyone who still has doubts on this point might look at the phrase "man and his wife" in the paragraph above. What attitudes about marriage does the customary term *man and*

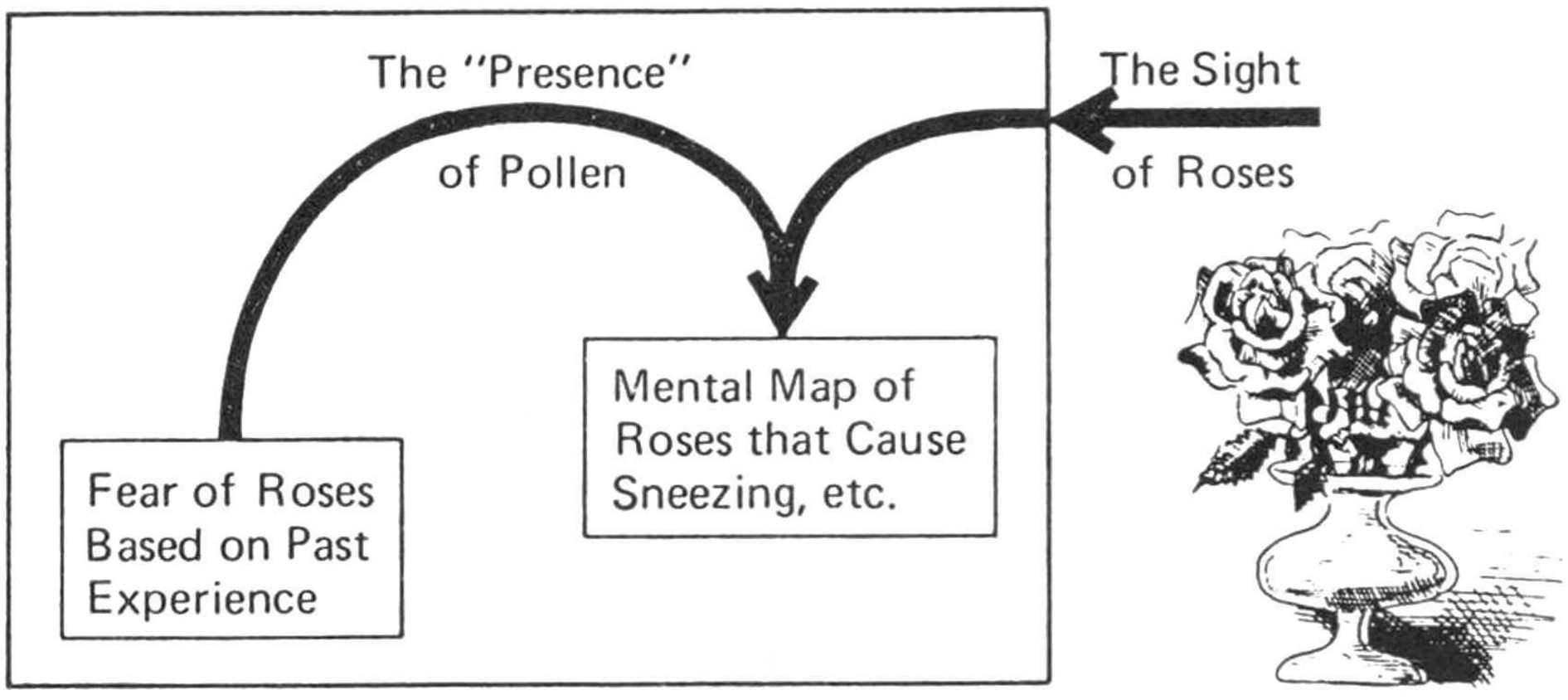
wife reveal? How would the constant use of *woman and husband* change our mental maps of the typical marriage relationship?)

Using this framework, we can analyze the four cases quite simply. The insane man has a pattern of events in his nervous system that convinces him of Dean Martin's presence. He "sees" and "hears" the

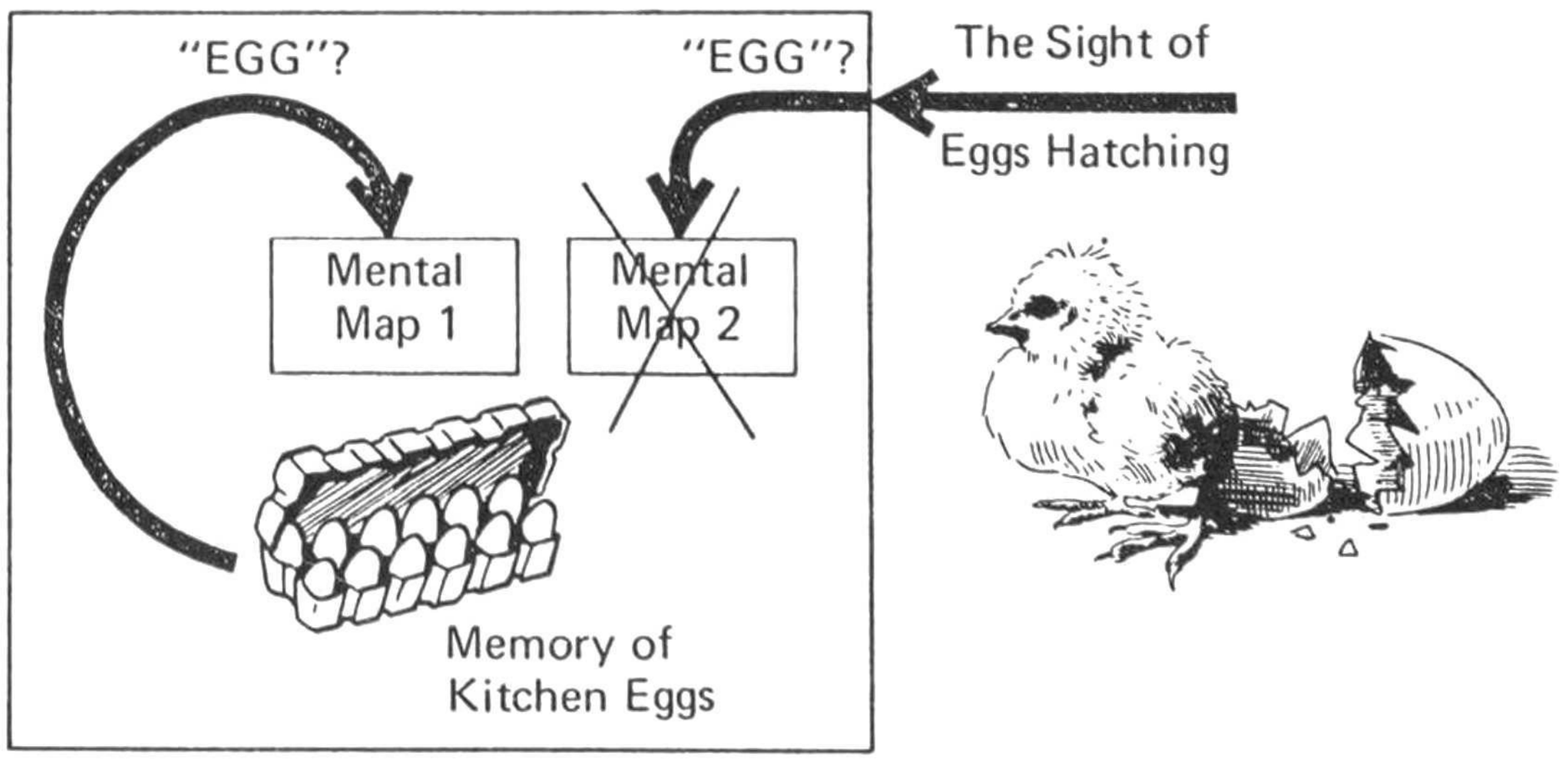


famous singer, even though Dean Martin is nowhere to be found in the immediate extensional world. His orientation is thoroughly intensional. Dean Martin "exists" only in the closed box of the man's own mind (see diagram above).

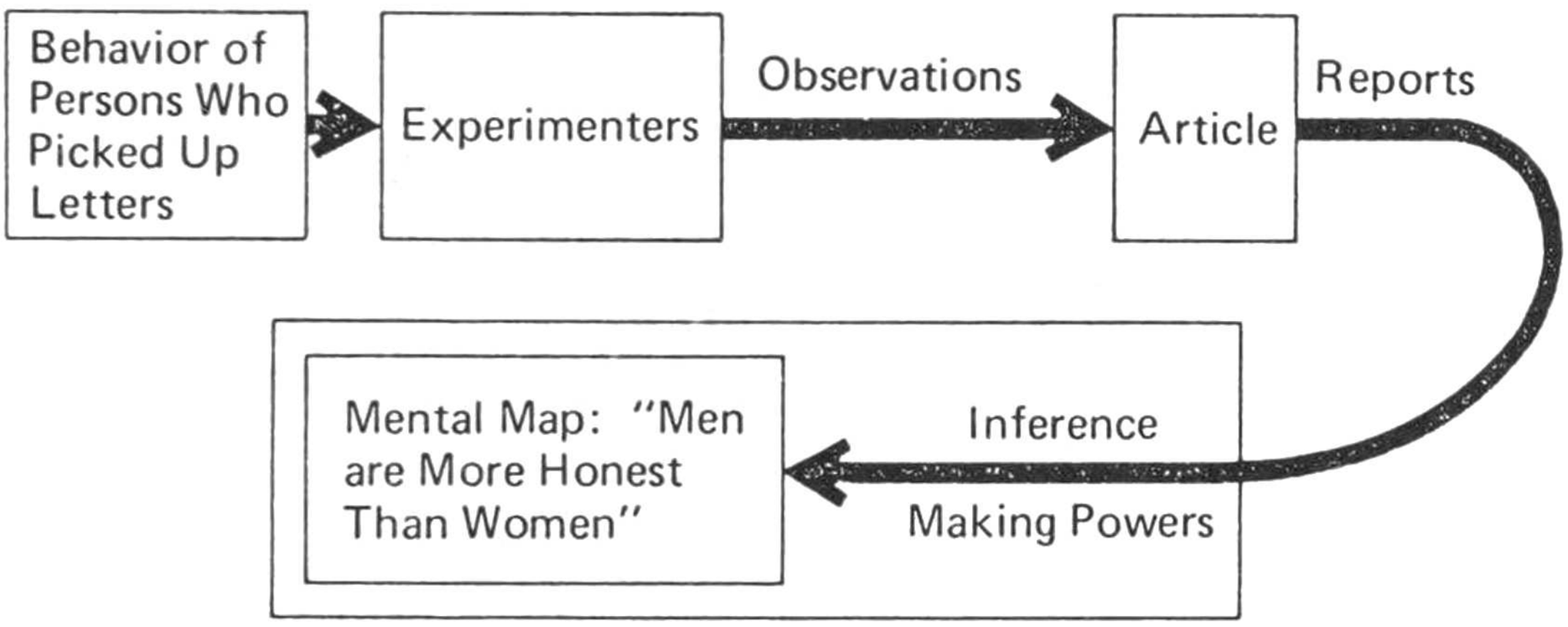
In the second case, we need to go outside the human nervous system. The un-sane young woman really does see some objects in her environment: paper roses. But she does not come into actual contact with the pollen to which she is allergic. Where does this "pollen" come from? Her mind:



The little girl presents a similar case, except that her error is based less on fear and more on the definition she has given the word eggs. In her mother's kitchen she has learned that objects called eggs contain a sticky white substance and a yellow yolk. Now she is faced with a new mental map for the word eggs. For a moment she tries to decide which map is the correct one.



The last example is more complicated. Here the objects to be considered are far removed from the persons who form the mental maps. The objects are the persons who picked up lost letters in gas station rest rooms. The mental maps belong to persons who read an article describing the experiment. These maps are inferences based on reports of observations concerning unseen behavior:

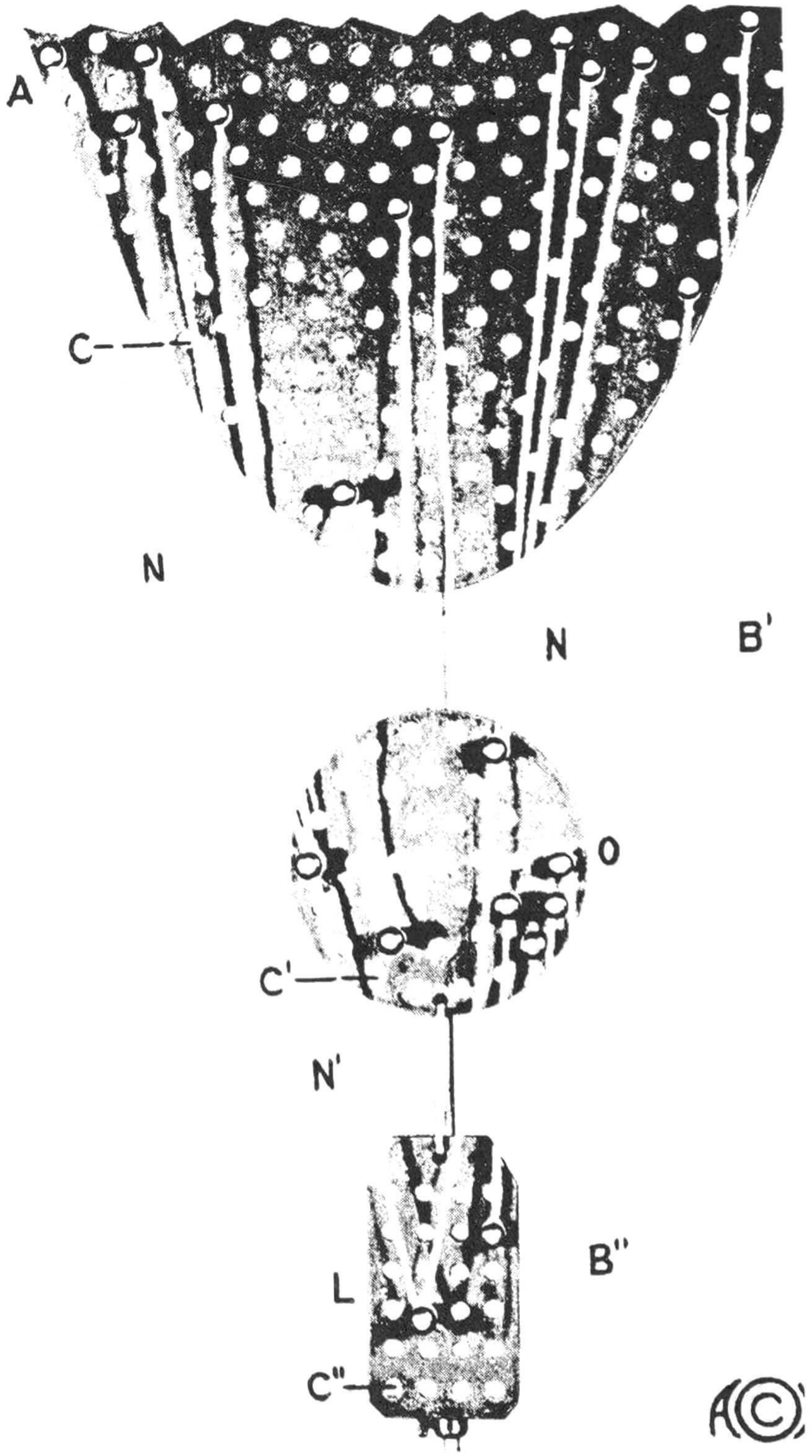


Notice that the farther an inference is removed from "reality" the less reliable it is likely to be. In this example, for instance, there is a huge distance between the "facts" and the inference. For this reason, the inference is questionable. First of all, an inference concerning all men and all women is based on the behavior of two hundred people, at most. Are *any* two hundred people an adequate sample of the human race? Also, how can we be sure that an equal number of men and women picked up the "lost" envelopes? Perhaps the men were more observant, more curious, or simply more willing to pick something up from a rest room floor. Moreover, it is very possible that the women had more need for the money. In many families, a secret $5.00 might please the wife more than the husband.

The Structural Differential

Each of the four examples above required a different diagram. Semantics would be a simpler subject if we could rely on a single

device to show the many complicated relationships among human beings, words, and things. Fortunately, such a device exists. It is the invention of Alfred Korzybski, and it is called the STRUCTURAL DIFFERENTIAL.



Look at the photograph of the structural differential. At first glance, it seems to be an artist's nightmare, a kind of "ugly-mobile." We see a confusion of strings, pegs, and geometric shapes filled with holes. What does the structural differential seem to illustrate about semantics? Anything?

Each of the solid structures represents a separate kind of human "knowledge". Each stands for a different level of our awareness of "things." The large structure at the top (A) stands for the level of "atomic events," the level of "things as they really are," or "whatever is really going on there." The round circle (O) is the "object" level, the level on which we perceive "things" as they appear to be. The lowest structure (L) is the "label" level, the level on which we give names to the "things" that appear in our minds.

To simplify the explanation, let's take an actual case. Suppose we are looking at a large brown dog we've seen many times before. Clearly, we cannot know *all* about this dog. We also know that we can think of the animal not as he appears to our eyes but as he exists in "reality". For instance, the color we call brown is a quality not of the dog but of the light reflected by his fur.

This dog that exists in "reality" is the A-level dog. On the most elementary of all levels, the dog is a pattern of trillions of atomic events. There are no colors, no noises, no smells — no human sensations of any sort. This is the level that underlies human perception and recognition. On the A level, our dog is a "mad dance of 'electrons'," as Korzybski put it.

The structural differential puts these understandings about the dog into clear visual form. Look again at the large structure marked A (atomic events). The small holes (C) represent the *characteristics* of the dog as he exists on the level of atomic events. Notice too that the bottom of the structure is a smooth curve called a parabola. The ends of this curve could be extended out of the picture, off the page, and so on indefinitely. The edge marked B is broken to show that we should think of structure A as extending outward and upward forever. Thus broken line B indicates that in "reality" our

dog has an infinite number of characteristics. To know *all* about the dog, we would need to know everything about the construction and function of each of his trillions of atoms. We would need complete understanding of his molecular construction, his cells, organs, etc. Such knowledge is beyond human powers. And even if we could know everything, what we learned one second might be untrue the next.

The "object" dog, the animal as we actually see him growling or wagging his tail, is represented by the circle marked O. Again, the holes (C′) stand for characteristics. But this time the characteristics are not unlimited; they are bound by a firm circle. The C′ holes represent all the characteristics of the dog that we might learn by observation, such as the color brown, the odor, the exact length of the ears, the shape of the teeth. The strings (N) connect the characteristics we observe on the object level to the characteristics no one can observe on the level of atomic events. Notice that relatively few of the holes on the level of atomic events have strings attached to them. This means that most of the characteristics of the A-level dog are left out when we move to the next level. Some of these omitted characteristics are indicated by dangling strings (B′). In other words, from the trillions of atomic events on level A, we have *abstracted* a recognizable pattern we know as the dog.

In semantic usage, the verb "abstract" means *to move to a different level, leaving characteristics out.* The process is known as ABSTRACTION. We practice abstraction when we recognize the brown dog on the basis of just a few features. That is, of the infinite number of atomic events that make up the "real" dog, we require only a few simple characteristics for recognition. The rest of the extensional happenings that make up the dog are simply left out. The dog we see (O) has only a tiny fraction of the characteristics of the A-level dog.

So far, we have tried to imagine the dog as a pattern of atomic events, and we have noted how this "atomic" dog (A) differs from

the dog we see (O). We have not yet given the poor dog a name. Let's do so now by calling him *Nozzie.*

Notice that the name *Nozzie* is not part of the dog we see on the object level. The same dog, after all, might have been named *Tom* or *Julian* or *Bernard.* The minute we use a name to refer to the dog we move to the label level (L). This means that we abstract again. The word *Nozzie* is not the same thing as the dog we perceive. *Nozzie* is merely a label we give to a dog we often see. In other words, with the term *Nozzie* we associate the characteristics (C″) found on our mental map of the dog.

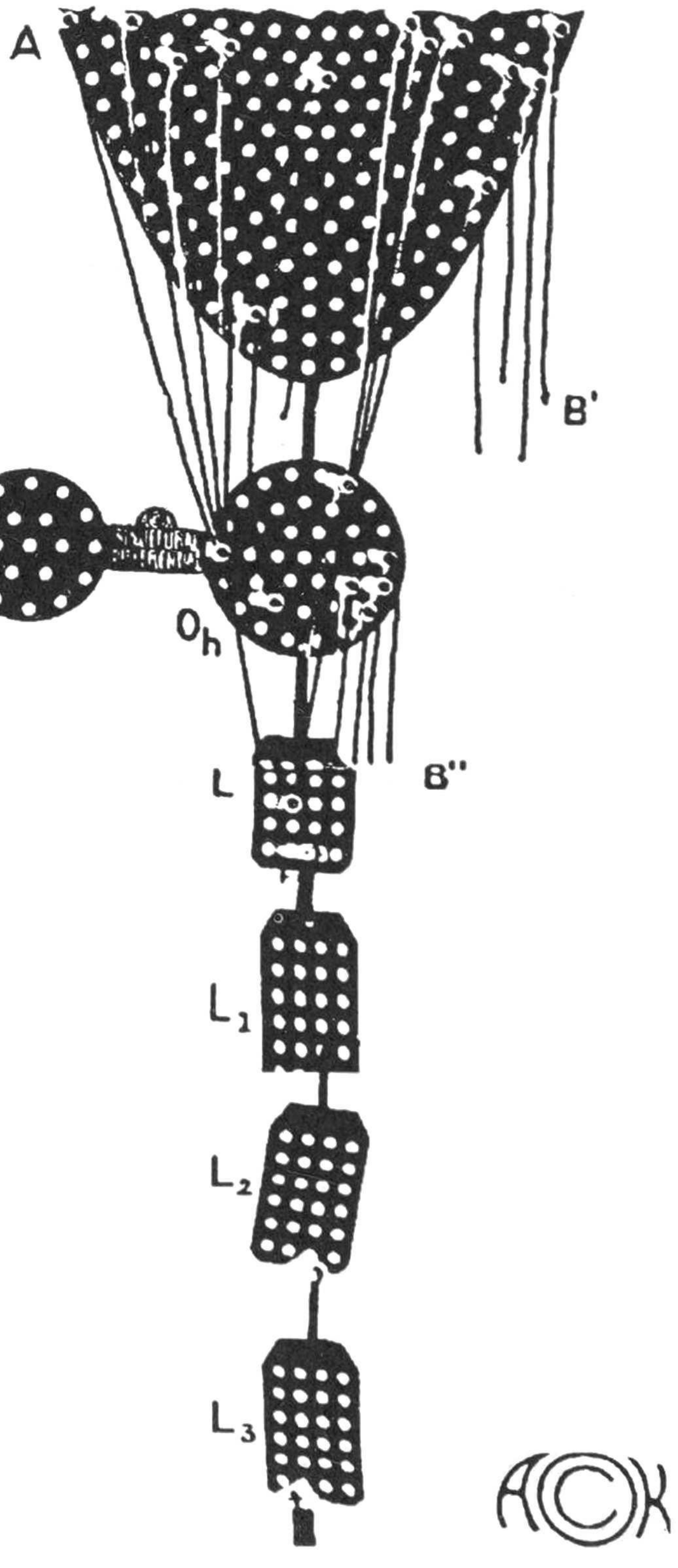
The number of characteristics on the label level is smaller than the number on the object level. This is so because our mental maps commonly do not include all the features we might discover through observation. For instance, our mental map of *Nozzie* probably contains no information on the small scar on his right ear or the bend near the base of his tail. If we sat down alone and tried to list his characteristics, we would come up with only a partial list (N′). If later we were to examine the dog, we would notice other characteristics we had not previously associated with our label (B″). *Whenever we abstract, we leave characteristics out.*

Abstraction Unlimited

Summarizing what has been said, we can think of our dog on a least three separate levels. First, we can conceive of him as a part of the colorless, silent world of atomic events. Second, we can see him as a "real" thing, a non-verbal object. Third, we can apply the label *Nozzie*, forming a mental map with the characteristics we associate with the name.

Our explanation of the structural differential has come a long way, from a "mad dance of 'electrons'" to a label in our heads. Even after reaching the L level, however, we are still on a relatively simple verbal level. After we label a thing (*Nozzie*), we can classify that label under another label (*dog*). We can also make a statement

about the label, then another statement about the statement we have just made. In theory, there is no limit to how far we can go.



The picture of the structural differential on the previous page links our original label (L) with L1, L2, and L3. This indicates that once we reach the simple label level (L), we can continue to abstract on other purely verbal levels. For instance, for L1, we can make a statement about or dog: "Nozzie is a Labrador Retriever". Here again we abstract, for we must leave out characteristics. The general term *Labrador Retriever* has fewer characteristics than the particular label *Nozzie*. Under *Labrador Retriever*, we can include only those features that Nozzie shares with other Labrador Retrievers. Similarly for L2 we might say, "Labrador Retrievers are dogs". Once again we have abstracted, since now we must remove all the "strings to reality" that Nozzie does not share with all dogs. On the L3 level, we are far enough from Nozzie himself to introduce inferences and value judgments. After observing Nozzie wolf down his supper we might conclude, "Dogs eat quickly." Or, noticing his big, brown, sincere eyes, we might state, "Dogs are good animals." (What strings connect this last statement with "reality"? The sentence concerns not dogs but the speaker's feelings about dogs. We might do better if we changed it to read "I like dogs").

Look at the photograph again. Notice that the picture is cut off below the L_3 symbol. The complete structural differential has a string of L structures, the last one marked L_n to indicate that the abstracting power of the human mind is unlimited. Notice too that there seem to be two "object" circles, O_h and O_a. From its position, we know what O_h represents, but what about O_a?

In developing the structural differential, Alfred Korzybski introduced the O_a circle to indicate the kind of "world" that animals inhabit. The symbol O_h stands for the "human" object, the "thing" as seen by human beings. The O_a circle represents the object as seen by animals. There are no strings attached to it, for to an animal, the object as seen is all there is. Period. No animal except man has the mental power to understand the difference between the level of atomic events and the object level. To another dog, our Nozzie is just what he appears to be as a non-verbal object, no more and no less. So there can be no strings running from the O_a circle up to the level of atomic events. Also, no animal but man can symbolize

things with words ($L...L_n$). Only humans can string L symbols together until they lead nowhere.

Back to Paper Roses

The structural differential is a useful device. It helps us understand the important process of abstraction. It constantly reminds us that whenever we make *any* statement about *anything*, we are at least three levels removed from "reality". It also provides a method of visualizing a great variety of semantic misevaluations. Take, for instance, the four examples at the beginning of this chapter.

Consider the insane man and Dean Martin. Does Dean Martin exist for the man on the O level? Of course: the man hears the singer's voice and apparently witnesses his physical presence. Does he exist on the level of atomic events? No. The structural differential could be rearranged to show the true nature of the man's insanity. There would be no strings between the level of atomic events and object level. What he sees as an object is an illusion created by his own mind.

What about the example of the young woman and the paper roses? In the case we do have something on the level of atomic events: the "reality" underlying the paper roses. We would have to run a few strings from level A to level O — but not very many. Similarly, a few strings would lead from level O to level L. The really important characteristics of the roses on the L level would be represented by pegs unattached to anything above them. These pegs would stand for the features of the "roses" that produce the pollen the young women fears. The "pollen" is a product of her mental label, not of the perceived object, not of the underlying "reality". The young woman's definition of roses includes their pollen-producing characteristics.

The example of the little girl and the eggs is somewhat similar. In this case, however, several strings should run from level A to level

O. All the objects she has seen as eggs truly *are* eggs. Her trouble is that several of the strings that should extend on down to the L level stop at O. These include all the characteristics of object-level eggs that result in baby chicks. Her definition of L-level *eggs* omits these features. When she goes to a farm and suddenly encounters the new characteristics, she has a real problem. She can either change her definition of *eggs* to include the new characteristics, or she can decide that an object having the new features is a different kind of object. She chooses the latter course, and is wrong.

The last example, the honesty experiment, covers more of the structural differential. We know that the inference "Men are more honest than women" is on a very high level of abstraction. We also know that when we reach this distant level, many characteristics have been left out. In this case, some three billion people have been left out — those included on the high L level but not found on the object level. Also, since in this case we know the O level only by reports of observations of unseen behavior, we cannot be at all sure of its characteristics. Along the line a good many square pegs may have been shoved into round holes.

THINKING IT THROUGH: THE STRUCTURE OF KNOWLEDGE

1. Improving the Structural Differential

The purpose of the structural differential is to help people understand a number of patterns and relationships. First we have the relationship between atomic "reality" and the "things" we see. Next comes the relationship between these "things" and the labels we give them. Finally come the many relationships between labels on purely verbal levels. Do you think the structural differential accomplishes its purpose well? If not, what additions or simplifications would you suggest? For instance, a number of persons have been confused by having to look *down* the differential to reach *high* levels of abstraction. If you think you can correct this (or any other) flaw in the differential, create your own version of the structural differential.

2. Increasing Semantic Awareness

So far we have considered the structural differential mainly as a device for teaching and learning. But its main purpose is to increase semantic awareness. Alfred Korzybski recommended that the student of semantics keep a structural differential in open view where it could be seen often. He himself adopted this practice. He said that the sight of the differential continually reminded him of the principles it symbolized. Teachers of semantics often have a differential on view in their classrooms. The device seems to speak silently; it is a constant reminder.

The only way for you to test this practice is to have a structural differential of your own. You can make one in a short time with cardboard, pins, and pieces of string. The top parabola can be hung on a wall or attached to the top of a short stand. Perhaps you are lucky enough to have access to wood, plastic or leather and the necessary tools. If so, go to it! *(Editor's Note: A wall chart of the structural differential, lithographed on heavy linen, can be purchased from the Institute of General Semantics.)*

The important thing is not the quality of the device but the quality of your thinking. A structural differential of glittering gold is useless if kept in a dark closet. Put your model in a place where you can't miss it. Think about it frequently. The students in one semantics class even made small differentials which they wore as lapel pins. These symbols increased semantic awareness and excited the curiosity and interest of other pupils in the school.

3. "Punctuating" the News

In explaining the principles of semantics, Alfred Korzybski often used the structural differential to indicate levels of abstraction. With regard to almost any object, he would first wave his hand at the large parabola, indicating that we should be aware of the hidden atomic events that underlie everything we perceive. Then he would

move his finger from the original object to the O circle, and finally to his lips. The object level, he would later explain, is "unspeakable". It is the world as perceived, not the world as labeled. Only after he pointed to the L levels would he start talking about the object. Later, in discussing almost anything, he might walk over to his structural differential, point to the non-verbal levels, and place his finger on his lips. His listeners understood.

Try using the structural differential to "punctuate" a short talk of your own. A good way to do this is to find an interesting newspaper editorial that ranges from reliable observations and reports to inferences and value judgments of the highest order. As you read the editorial slowly aloud, use the "punctuation pauses" to point to corresponding levels on the differential. You might also pause after several key words and move your finger from the non-verbal levels to your lips. Your audience should understand that their understanding of the terms used may be far removed from whatever "reality" underlies them.

4. "Unspeakable" You

One of the ideas represented by the structural differential is easily born out by self-examination. On the object level, most people have fairly clear impressions of their mental, physical, and emotional characteristics. Yet most people also feel that many of these characteristics cannot be fully expressed in words. The more people search for words, the more they find that words do not represent what they inwardly feel to be "real." We often hear statements like these:

"Yes, I'm lonely...but not in the way 'lonely' usually means."
"He makes me so mad with that word! I'm not just 'pretty'."
"I'm not really quick tempered — it's just that I *care* about things!"
"You can call me lazy, because you're my friend and you understand."
"I'm too smart to be smart."

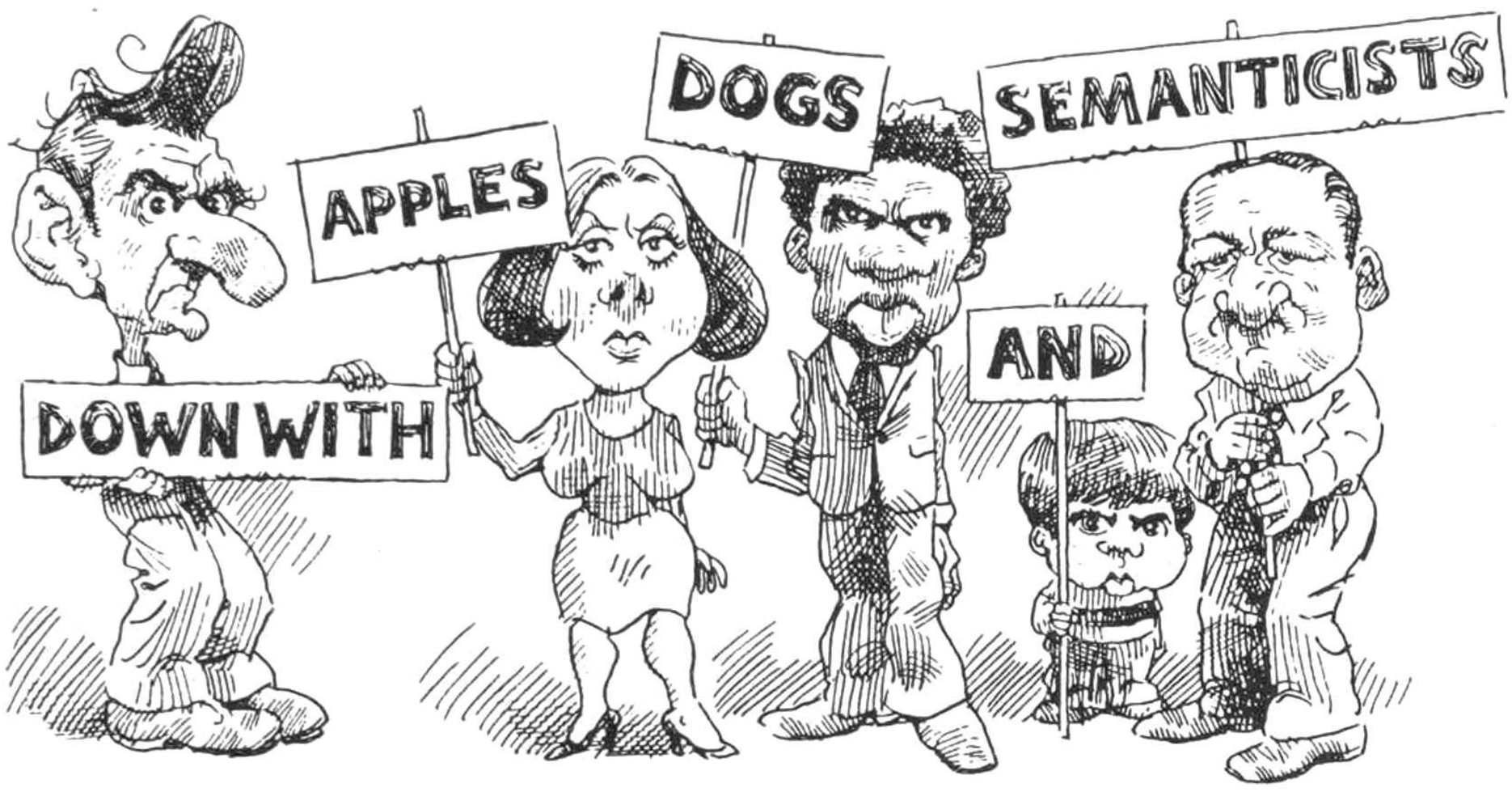
Write down three adjectives that "describe" three of your major traits. Next to these words write their L-level definitions, the meanings most people (and the dictionary) would give them. Now examine yourself on the O level. Do you exactly fit the L-level labels? If not, try to explain how you — as a "real object" — differ.

5. Abstractions Up and Down

The old game "Twenty Questions" might well be called "Abstraction." One player thinks of a specific object and tells whether it's animal, vegetable, or mineral. These are very abstract terms, since among them they include almost everything in existence. The other players then have twenty yes-no questions to guess the object. The idea is to guess it in as few questions as possible. Good players know that the game is won by proceeding to ever lower levels of abstraction, a step at a time.

The game might be played in reverse, starting at the lowest verbal level and proceeding toward higher abstractions. A player loses when he is forced to use that supreme abstraction, the word *thing.* He is set back a point when someone else can insert a term between the last word and his new one. Starting with our brown dog, for instance, the sequence might go like this: *Nozzie, Labrador Retriever, dog, mammal, vertebrate, animal, living thing, thing.* And from the word *thing,* of course, we might go back down to another object: *thing, manufactured object, printed matter, book, textbook, English text, semantics text, Making Sense.*

Starting with any object you wish, see if you can ascend through at least five levels of abstraction to the word *thing.* Then come back down through at least five levels to a different object. Try for as many levels as you can, and make the two objects at the ends as unlike each other as possible. You might diagram your series by linking two structural differentials together at their "tails."



6. Exploring on Your Own

The structural differential can be applied to human activity in a great many fields. Some writers of fiction, for instance, say that there are two basic ways of finding a story. The author can start on a high level of abstraction and work down, or he can start on a low level and work up. In the former case, he would start with his theme and ask himself a series of increasingly specific questions:

> Theme: courage. What kind of courage? In what interesting situation would this courage be needed? What would happen if the character didn't find the courage? What should the character be like? What should his name be?

An author beginning on a low level of abstraction might start with a certain object-level character and work up:

> What are my Uncle Fred's characteristics? Why do I find him interesting? What sort of situation would force him to be courageous for the first time in his life? If he found this courage, what would the theme of the story be?

courageous for the first time in his life? If he found this courage, what would the theme of the story be?

Possibly both authors, working in opposite directions, might arrive at a similar story.

Think about other fields that interest you. Can you apply the structural differential? If you have trouble, take any subject you know something about. What first interested you, a low-abstraction feature or a high-abstraction feature? Could another person have become interested in another way? Have you devoted too much of your attention to one end of the scale?

Or you might try remembering stories from books, movies, or TV. A number of stock situations are based on conflict between two ends of the abstraction scale. For example, the stereotyped old political boss (low level) signs up for an evening course in government. The young instructor (high level) gradually yields control of the class to the political pro. Conflict develops, and the class situation becomes a political situation. The instructor fights with theory, the old boss with time-tested practice. Does all this sound familiar?

7. The Beast in You

The relationship between O_h (the human object) and O_a (the animal object) is an interesting one. Animals cannot conceive of the atomic "reality" behind the "things" in their environment. Neither can they abstract to higher and higher verbal levels. To be sure, some animals can "learn" a small number of words. But to an animal, a word is not a symbol but a sign.

A sign is a signal that commands a certain action or announces the presence of a thing or a person. Dogs, horses, and some other animals can be taught to obey simple verbal commands. Dogs can learn a few names. The dog's labels, however, are not really on the

human L level. An animal seems unable to separate its words from the objects they name. For example, suppose that a dog associates the name *Bob* with a boy next door who often plays with him. When the dog hears the label *Bob* he will start looking around for the object Bob. His master's words "Bob is not here" only make matters worse. For the dog, *Bob* cannot mean Bob as an *idea*; it always means Bob as an *object*, here and now.

Animals, then, cannot understand the complex world of human beings. The fascinating thing is that neither can humans understand the much simpler world of animals. We know that the only world that exists for any individual is the intensional wold, the "world as he sees it." This statement is also true for animals. What does a flower look like to a hummingbird? What does a grandstand look like to a racehorse? No human can ever really know. We can only imagine.

Choose some animal and try to spend a short period inside its head. If you can, find out something about the animal's perception. Does it see in color? Does it see well at a distance? (A librarian or biology teacher may be able to help you with books). A dog's world, for instance, is something like a black-and-white TV movie with the sound garbled. If you lived in a dog's world, few things would have names, but almost everything would have a distinctive smell. Your mind would have feelings and interests but no words to use as tools of thought. Your whole past would be like your own "lost" infancy, before you learned to name things and remember them. Your future would not exist, and could not be planned for.

If possible, follow a real animal around and try to imagine the world it inhabits. This is not easy; we humans seldom bother to remember that animals live in a different world. You will need to develop a non-verbal awareness of significant objects. Total success is impossible — but how far can you go? Do not fictionalize your experience in the manner of modern authors who put human minds inside of animals.

8. The Best in You

The little girl with her "eggs" and the young woman with her "roses" had problems with definitions. Such problems often arise when we fail to base our definitions (characteristics of the L level) on lower-level "reality". Alfred Korzybski pointed out the trouble caused by misleading definitions of terms like *marriage*. Before two people are married, their definition comes largely from other L-level sources, such as the reports of other people, books and magazines, radio and TV. It usually includes a marriage partner who is seen as a high-level abstraction, with many characteristics (including flaws) left out. Couples who form such L-level definitions are often disturbed when they do get married. The object-level "reality" of marriage cannot possibly live up to the label-level definition. The flaws that were once left out suddenly become most apparent. When trouble develops, the parties behave very much like the little girl who decided that eggs were not eggs. They declare that their marriage is not marriage, and seek the divorce courts.

College is another term whose definition often causes trouble. Is college a place where one inhales wisdom from the atmosphere of giant libraries and ivied halls? Is college an endless round of fun and games? Young people who form definitions like these often have to make serious semantic adjustments.

Choose one term that stands for something important in your future. "Define" it by writing down all the characteristics you can, starting with the most significant. Now go through your list and attempt to mark each item with a symbol from the structural differential. O stands for object-level experience. L_1 to L_4 can stand for low-level abstractions you feel are firmly grounded in "reality". L_5 to L_8 can stand for high-level inferences and value judgments.

People with the best semantic adjustments have their verbal "strings" anchored firmly to the ground. Finding your own extensional anchors will bring out the best in you. What steps could you take, if any, to improve the definition of your important world? List

several things you should do, and then, when circumstances permit — do them!

9. Completing the circle

This chapter includes two photographs of the structural differential. Neither of these pictures is a complete one. As finally developed by Alfred Korzybski, the structural differential included a string of L-level structures, the last labeled L_n. This L-level "tail" could be allowed to hang straight down. Or, to illustrate another point, it could go first down, then up, with the L_n structure pegged to the A-level parabola. Try to visualize this picture: a structural differential with nine connected L-level structures, the first attached to the O-level circle, the last to the A-level parabola. What do you think Alfred Korzybski was trying to illustrate by this arrangement of the differential?

Consideration of the following questions should help you:

1. How much do we really know about the atomic events represented by the A-level parabola?

2. How has most of this "knowledge" been gained? Through direct observation? Are atoms really like the miniature solar system shown in some chemistry books?

3. Why might it be correct to say that the level of atomic events — *as we know it* — is an abstraction of a very high order?

Try to think your way through this complex but important problem. Then explain your new discoveries in a well-worded paragraph.

Robert R. Potter received his B.S. from Columbia University School of General Studies and his M.A. and Ed.D. from Teachers College, Columbia University. His interest in general semantics began in 1948 when his freshman composition course at Antioch College was converted to a general semantics survey by Professor Basil Pillard. More than 20 years later, he and Daniel Sohmer, then Managing Editor of Globe Book Company, discovered that they shared a general semantics heritage as college freshmen. The result was *Making Sense*, a well received attempt to make general semantics available to the high school market.

Bob has taught at levels "from graduate school to junior high." By now he has written sixteen books, the latest of which is a juvenile biography of Buckminster Fuller. "I am amazed at the similarities between Fuller and Alfred Korzybski," Bob writes. "Both were true originals, in the sense that they went back to the basics when pursuing any inquiry, ignoring the overlays and the accretions of centuries of commentators. Both had a characteristic dynamism that led to a kind of cult following. Both had great confidence in mathematics, from which both saw emanating webs of necessity and belief that common and caring sense could support without the math. And, of course, both were *great men*."

Words are abstractions made of things; reports are abstractions made of experience; inferences are abstractions made of descriptions. When people react to words as if they were things, to inferences as if they were descriptions, etc., they are confusing levels of abstraction.

Anatol Rapoport
Science and the Goals of Man

TEACHING CREATIVELY

MARTHA A. BARTTER

Thesis:

American schools are in trouble. Students graduate with inadequate or inaccurate knowledge and limited skills; many fail to graduate at all. Many foreign students but few Americans qualify for graduate school in math and science. Solutions have been proposed by various experts, some of them contradictory. Many include elaborate testing programs to increase 'accountability.' Few solutions have been offered by classroom teachers, however, although they have the most to gain — or to lose — from the controversy. In fact, few experts seem to have consulted classroom teachers at all.

At the same time, many teachers suffer from 'burnout.' They are tired of fighting the system, negotiating with administrators, persuading parents, lecturing lackadaisical students and taking the blame for virtually everything that goes wrong in America. Not too long ago, teachers were seen as respected professionals; most had confidence in their own effectiveness. This has changed. Many teachers now see themselves as service providers, and they have little evidence that their services are valued.

Teachers' specific complaints — overcrowded classrooms, insufficient salaries, etc. — can be remedied; but boredom and frustration require a different cure. When one day runs into the next, when nothing unusual or interesting occurs in the classroom, when teachers just teach and students just do their work without a spark of new insight or creativity to enliven the day, it does not seem strange that many good teachers eventually give up classroom teaching.

Problem One:

Creativity — the spontaneous, surprising, productive doing or making something new — is something that many envy but few

claim. Americans, who lament the passing of the 'competitive edge' once generated by our traditional creative genius, demand that our schools remedy this situation by teaching creativity. Since we define creativity as a novel, not-already-known behavior, and since we can teach only what we already know, creativity cannot be *taught.* But we can recognize it, and the conditions which *foster* it are well known. Unfortunately, the standard classroom fails utterly to provide these conditions. In fact, if we look at the behavior that most teachers reward, we find that "the successful child is docile, neat, does what he/she is told to do, doesn't talk back, is well-behaved in school and gets good grades. This child is basically passive and charming" (1). Creativity is praised only in adults. "A successful adult is self-reliant, innovative, assertive, makes logical decisions and doesn't follow the rules made by others" (1).

Can good pedagogy turn a passive child into a creative adult? Probably not. Nor should it have to. Most youngsters come to school full of energy, questions and 'discipline problems.' By the third or fourth grade, however, the majority have learned to sit quietly at their desks, to color inside the lines, to read and write when and what they are told, and to raise their hands for permission before doing anything at all. Those who do not willingly adopt this 'proper school behavior' either rebel ('act out'), or show resentment by quiet failure. None of these behaviors can be called creative.

To locate the cause of this changed behavior we look at the shared experience of the children, and their shared experience comes largely in school. This is fortunate. As teachers, we have little opportunity to do very much about our students' psychological makeup or their home life. The only place we can make a difference is in their school experience; and the only part of that experience that we have much control over is the way in which we handle our classrooms. We can provide children with conditions that enhance learning. These conditions include a richly varied environment, freedom to experiment and materials to experiment with, permission to proceed at their own pace, and praise for the generation and active testing of new ideas.

Now there is nothing new about this idea. The 'open classroom' has been around long enough that even some parents approve of it. Oddly enough, however, even those schools which encourage 'open classrooms' for young children close them early; by middle or high school, the familiar pedagogy is firmly in place. The teacher occupies the front of the room, while the students occupy neat rows facing him or her for an hour before going on to the next class, where they will repeat this behavior for a different teacher and a different subject. For most students, even the 'good' ones, school becomes a series of disconnected exercises, not the start of a life-long passion for productive learning. From motivated, self-starting children, we create students who are just marking time until they can get out into the 'real world.'

Problem Two:

We teachers are caught in a pedagogical revolution. This revolution is driven by several factors, including criticism of our students' skills and knowledge and fear of losing out in research and development. Schools are criticized for turning out students who not only don't know very much, but who don't even have the skill to find out what they don't know. Many of the changes proposed for the classroom have focused on course content — the notorious New Math, revisions of social studies and history to include the contributions of minorities (including women), process-oriented writing programs, etc. These curriculum changes have not always produced the effect their authors intended (in the case of math, the reverse may have occurred), but results of research stimulated by these demands agree on one important point: to produce a generation of well-informed graduates, teachers must transform their pedagogy. We must foster our students' learning process by giving them an effective model to emulate. We must shift from an information-based, teacher-centered classroom to one that is process-based and student-centered.

The success of this revolution thus depends upon our ability as classroom teachers to alter our ways of teaching. Most pedagogical theorists seem to believe that we can make radical changes in teaching style simply by determining to do so. Following their advice, we go to Inservice workshops, gather 'helpful hints' from costly consultants, and study the latest research. Unfortunately, for many of us the result is increasing frustration. Such advice can indeed help anyone whose personal 'style' already incorporates the necessary elements, but forces many other experienced teachers to act unnaturally. This violates yet another research finding: that students respond best to — learn the most from — teachers whom they perceive as enthusiastic, informed and authentic, no matter what teaching style they employ. We can assume, therefore, that any mechanical revision of our teaching behavior will be counter-productive.

Antithesis

For most of us, the front of the classroom is a safe and familiar place. The idea of giving it up can be frightening, and we don't have to look far to find good arguments against doing so. We have a great deal of subject matter to get through; we are the ones who best know the information that must be taught; we are paid to deliver a course of instruction. If we don't, students, parents and administrators alike can rightfully find us derelict in our duty. Moreover, this is the way we were taught. In colleges of education, student teachers are still taught about 'open classrooms' by teachers who lecture from the front of the room. It is virtually the only model we know.

If the students don't like what we teach, or worse yet, fail to learn, it must be their fault. After all, we are giving the best we know; we are using the model that we were successful with. But as Frank Smith notes, all of our students do learn. Most have achieved some level of academic competence. But many have also learned to hate reading, to fear math, or even to reject all formal education. And

they have learned this at school (7). Smith concludes that any child can read, but only so long as s/he has learned to do so before entering school (6).

This is a harsh judgment, especially since most of us try to make students feel comfortable in the classroom. We smile at everyone, whether we 'approve' them or not; greet them warmly, let them know we care, take time to talk to them individually. We answer their questions thoughtfully. We encourage them to keep journals. We make time for conferences. We wait a minimum of three seconds for them to reply to our questions, and suppress our impatience or contempt when their responses fail to meet our expectations. We take pride in using modern pedagogical methods. But we may not feel very comfortable doing these things, and we may notice that students can tell a smile from a grimace, an encouraging wait for answers from a jaw-clenched count of elapsed seconds. If the new pedagogy causes us to behave inauthentically, and if students can accurately spot our lack of authenticity, we might as well give up at once. After all, the old ways at least have the benefit of a long clinical trial.

Synthesis

These apparently intractable problems — lack of creativity and poor academic performance — demand a joint solution in the classroom. Fortunately, they synergize. In a sense, they are two sides of the same problem: fostering creativity calls for the same changes in the classroom as does the new pedagogy. Our difficulties come with implementation. We can begin by shifting from the metaphor implied in the word 'teaching' (where the teacher knows and doles out the information to students who must passively receive it) to the metaphor of 'fostering' or 'coaching' (where the fosterer or coach has expert experience and information which s/he shares with potentially expert practitioners who want to emulate the fosterer).[A] As students of general semantics know, it becomes quite possible to

alter behavior if we first alter the assumptions upon which that behavior is based.[B]

I can document this from my own experience. Some time ago I began to realize that I was literally cheating my students. I came into the classroom knowing more than they did (which is, after all, my job); but each day I pulled ahead of them. They learned from what I taught them, but I learned from them and from the act of teaching them. In other words, however much my students learned from me, I learned more from them in every class session. It didn't seem fair. The act of teaching seemed to make the difference, so I looked for ways to have them do some teaching. This did not mean changing my teaching style. The teacher-centered, content-oriented classroom not only felt safe, it met everyone's expectations: my students', my superiors', and my own!

Still, some change seemed indicated. I was thoroughly sick of pat essays, regurgitating the platitudes that college freshmen had absorbed in twelve years of schooling; and I was thoroughly sick of pat classes, where a few students responded to questions, fewer asked any, and most sat (or slept) out their allotted time. Having taught Charles Dickens' *Hard Times*, I recognized the description of students lined up like little pitchers waiting to be filled with facts; my objection to my own insight sounded familiar. If I learned from them, surely they had something to 'give' as well. I determined to reorganize my classroom style.

Coming to this conclusion did not mean that I found it easy to act upon. I could plan ways to turn more responsibility over to the students, but getting them to take this on was hard. For instance, I had trouble getting them to answer my questions. This made me wonder why I was asking them questions, when I was the one with all the answers. Was I testing their reading of the lesson? Was it something that 'teachers do?' Was I just filling up time? Was I trying to interrupt the non-stop sound of my own voice? These didn't seem like very good reasons.

I usually asked two kinds of questions of my classes: factual questions, aimed at setting the stage for the lecture (and incidentally intended to scare the students into doing their preparation), and 'thought' questions aimed at opening the topic for the day — open-ended questions with many possible answers, from any of which I could steer the class 'discussion' (mostly lecture) into the appropriate channels. I tried to be receptive and non-punitive, or at least polite, when answers didn't come, or when they showed that the student hadn't read or thought about the text in any meaningful way. And I tried to let the class know that there were lots of ways to answer the thought questions. The hardest part of all was 'being authentic' while all this was going on. The first problem, as any well-trained general semanticist could have told me, lay in my trying to change my behavior without first changing the attitudes and assumptions underlying that behavior. The second problem lay in my having to diagnose my own problem. It's always easier to see where someone else is going wrong! (2) Class discussion still came hard — except for one marvelous day.

That day a class suddenly 'came alive,' cooperatively contributing ideas faster than I could put them on the blackboard, organizing them appropriately, ending with their own analysis of a difficult text on a level that I had not approached in my own preparation. But when I tried to share this with the next class, who had read the same text, done the same exercises, and were in most other respects very similar, nothing of the sort occurred. What had worked with the first class? Why did the students in the second class fail to respond to the exciting ideas generated by their peers? Clearly something creative had occurred in the first class that had not occurred in the second. The students in the second class were not only just as 'good' as those in the first, they were, in many respects, better; it could not have been that they weren't able to understand the concepts I was explaining to them. The difference lay not in 'getting' the information, but in generating it.

The more I thought about it, the more it seemed that, on that one day, I really had moved out of my 'teacher-in-the-front-of-the-room'

role and become the recorder of my students' own ideas. Why did it seem so important to be in the front of the room, anyway? To be the one with all the answers? From my past experience with teachers, of course. And my students expected me to do this, because that fitted their experience with teaching, too. All of us were living out of our expectations and assumptions — except on the day when the class had become the teacher. Could it be that the students knew perfectly well that the questions I asked were little tests, not real requests for information? That when I assured them that there were no 'wrong' answers, they knew that I was, if not lying, at least stretching the truth; that there might not be 'wrong' answers but there certainly were poor, good, and real good answers, that I had already decided which these were, and that I wanted the real good ones? Had I ever asked a question to which only the students themselves could possibly know the answer?

I wanted all my classes to be like the one where the students took over. The problem lay in having it happen. I was still the teacher; I could not in conscience abandon my role (and my students' trust in it); I was the one being paid to teach them. But they clearly learned more, better and faster, when they taught themselves.

Disclosing Assumptions

My exploration led me to some conclusions: in order really to foster creativity in my classes, I was forced seriously to examine my attitudes and beliefs about teaching: Why did I feel so uncomfortable when waiting for a student to answer a question? How could I be sure that my students were learning what they were supposed to unless I delivered lessons in the traditional way? If reflection and discussion are among the prerequisites for creative thought, why did noise or movement in the classroom make me feel threatened? Before I could feel comfortable with a new way of teaching, I had to disclose **and test** my assumptions, and — if they didn't work — find new ones to act from (3).

One of the first assumptions that I had to test was whether the effort was worth it. Did I really want to do this? Teachers in my workshops have listed even more problems they anticipate from a classroom full of creative students than I did.[c] These include:

Lack of apparent control: movement, noise
Lack of discipline; fear that subversive students may surface
Difficulty in following course guidelines, completing syllabus
Stress on the teacher who can't teach everyone the same thing at once or use the prepared texts and forms, etc.
Difficulty in grading
Difficulty in seeing any 'learning' going on
Problems with parents and administrators who see a noisy classroom as chaotic
Fear that students may waste time; teacher cannot see everything at once
Fear that students won't learn the subject matter or may take up inappropriate topics
Fear that students won't be prepared for college, or will have lower test grades.
Inappropriateness: school is serious business, not fun

In the same list, teachers usually disclose even more fundamental assumptions:

I wasn't taught like this [therefore, I **can't** change]
I will feel threatened, out of control [therefore I **won't** change; it's too dangerous]

These last two assumptions can really prevent us from trying new options. They are quite sufficient to keep our jaws clenched and our smiles forced as we apply the 'helpful hints.' They get in the way of creativity, our own as well as our students'. Thus, even though we may recognize and even value creativity in the classroom — we may feel reluctant to foster it.

One way to start making changes is freely to admit the drawbacks and difficulties, and assess them. How threatened will I feel if I'm not in control? What will I do if I feel really frightened? Can I stand it? Will my students learn anything? What will they learn? How can I prove that they have learned anything if I didn't plan it out and feed it to them? Will there be any way to test their knowledge (and justify my job)? What's the worst that could happen?

Teachers have no difficulty in recognizing creativity; students may

show enthusiasm
question teacher authority
achieve personal perspective
ask hard questions (including why we do something!)
develop critical thinking
develop sensitivity
be self-motivated, show initiative
do extra-credit, creative assignments
get noisy, excited, volunteer ideas
present unusual points of view
look strange; have a 'weird' sense of humor
show passion, intensity

Nor have they any difficulty in listing reasons to foster creativity: doing so can

generate enthusiasm
help students learn to learn
help us to know our students better
personalize learning
tap resources that otherwise we may never know about
make their writing more interesting to read
make them more interesting to teach
develop mental flexibility
help students to feel more positive
show students that they have choices

produce students who are more successful academically
let students learn ways to solve future problems
permit students to think independently, see possibilities
make classroom a less fearful place
develop respect of the students for their peers
help students to discover and value their uniqueness, their strength
make students freer, more fun to teach

In general, a creative classroom is a lot more fun to work in. And we have little doubt that our efforts are valued when students actually get excited about learning, volunteer to do more work than is assigned, and seem to enjoy it. We need to recognize that, although the 'new pedagogy' is fun, simple and workable, it seems difficult because it violates many of our assumptions. The payoff comes in our peak teaching experiences. Usually they include a large element of student creativity; almost without exception we would like to see them happen more often. A creative classroom can foster student excellence. It can also prevent teacher burnout.

Testing Assumptions

Having examined my own assumptions about teaching, I had to test them. This meant asking myself what I really wanted to see happen in my composition classroom, and then checking my methods to see if they would produce the effect I wanted. I soon discovered that the cut and dried questions I was asking had little to do with the kind of learning that I really wanted to see happening. When I gave my students open-ended questions and let them write about them for a while before having to risk speaking up before the whole class, they not only gave better answers, but seemed to enjoy the whole process more. When I encouraged them to work out problems in small groups, they often came up with really interesting ideas. Since one of the things I wanted to see was evidence of real thinking, I felt encouraged.

I also hoped that giving them a chance to teach each other would result in better retention of information, and better assimilation of principles. This created some problems since I didn't know how to make them aware of the principles without lecturing. Having them coach each other on rough drafts of their papers seemed to help; not only were they creating and applying their own standards (guided by their analysis of well-written, thought-provoking essays), but they were also developing a real sense of audience — one that extended beyond the student-teacher deadlock.

When a writer ignored helpful suggestions on the editing sheet, I could not only add my own comment to the paper, but I could point out that a peer had seen the same problem. That seemed to have a good deal more impact than my comment alone. They saw themselves as writing to share important information with their class. This was both harder and more interesting than 'psyching out' the teacher. It also resulted in much more interesting papers, which had been one of my initial goals. The extra work seemed justified.

My teaching had become much less authoritarian and directive. I acted more like a resource than a lecturer. But some students really seem to need the kind of sequential instructions that a good lecture can provide, and some kinds of instruction require more directed learning than composition does. The teacher must decide what mode of instruction is most appropriate for the combination of subject and students at hand. But virtually all students respond well when subjects are presented as opportunities for self-directed, creative inquiry. They seem quite willing to learn rules, details, structures, etc., if they can explore and use the results of doing so.

The Spotting Procedure

There is no magic formula for effecting rapid, permanent change. In fact, when I seem to have licked a troublesome assumption, I often find a new one getting in my way. The problem now is not how to deal with it, but how to notice that I hold it. Since these

problems are usually much more apparent to others than to ourselves, I sometimes must rely on my peers or my students to point these problems out. But this can be a slow process, and students — though appallingly acute at noticing problems — are not always very clear at communicating them. Much quicker, I find, is a process called a 'spotting procedure.'

The first step in implementing this procedure is to stay aware of assumption patterns and the essential role they play. This means staying sensitive to one's own interpersonal actions, and remembering that they stem from a complex of assumptions about how one can and should behave. When something starts to 'show up' — to make me feel uneasy, uncomfortable, or simply aware (as one becomes aware of a small splinter, before it becomes an infected mess) — is a good time to start questioning the assumption patterns that keep this behavior or relationship in place. And one way to disclose the assumptions is to violate the pattern, quite deliberately. This will often bring all the complex of assumptions up yelling and screaming. Then one can start testing them for effectiveness.

It would be very comforting to think that simply noticing, raising and testing one's assumptions was all one had to do to change behavior. Unfortunately, this is not always true. Sometimes, no matter how thoroughly one has established the unreliability (or actual falseness) of some operating assumption, and worked out new assumptions with which to replace it, one finds oneself repeating exactly the behavior one had sworn never to do again. It is at this point that the two-way nature of assuming can work in our favor. *Not only does our behavior stem from our assumptions, but our assumptions also reflect our behavior.* (This is the reason that behavior modification works.) So we can at this point simply begin a carefully planned, three-part intervention in the behavior pattern we want to change.

The first step has already been taken: the pattern has been noticed, and the underlying assumptions brought to awareness. The next

step comes with breaking the behavior into small sequential actions, and finding ways to notice them. Then when one finds oneself in the middle of the displeasing behavior, one can at least notice the progression of steps towards the rejected outcome, even if one cannot intervene in that progression. This noticing will sensitize one to the pattern, however; the next time this occurs, one will probably become aware of one's behavior earlier in the sequence. At this point, one might be able actually to interrupt one's own action. This may seem unbearably embarrassing, but few have died of embarrassment, and the result will be worth it. For the next time this pattern recurs, one is very apt to notice it even earlier, perhaps in time to interrupt it before anyone else becomes aware of it. This interruption will be far less embarrassing, and more encouraging. Eventually a combination of new behavior (which results in new assumptions) and new assumptions (the result of testing and disconfirming the old ones) will result in new behavior patterns which feel perfectly 'natural' and authentic.

The more we act from aware, tested assumptions, the more we free ourselves from the kind of automatic, restrictive patterns that limit our own ability to foster creativity in ourselves and in others. The more creativity we foster, the more fun our work can be, and the more rewards we find for the fostering. Which leads us to further fostering, and further enjoyment of our lives and our work. As cycles go, this is one of the most effective we can operate in.

Results

For me, putting a more student-centered, process-oriented pedagogy into operation has been both fun and liberating. Of course, it seems particularly appropriate to a composition classroom; but it also works impressively in subjects that are 'traditionally' more lecture-oriented: literature and linguistics. It not only creates a more active, effective classroom operation, but it also seems to enhance student's retention of information. Moreover, it restores the active operation of the classroom to the place where I believe it should be: with the

student, who is not only accumulating new information, but also learning new and more effective ways to learn.

If we truly value education, we must learn to see it as a process: in the early years, we teach students the skills they must know in order to accumulate more knowledge, but as they acquire these skills, we must progressively work ourselves out of the job. True learning must stem from self-motivated, self-conducted inquiry. This again is a skill — one that we can *demonstrate* better than *teach*. Like creativity, a spirit of inquiry (which can be fostered only among those with the learned ability to carry it out) seems a requirement for any improvement in American schools.

I wish I could report universal student acceptance of this procedure, but in all honesty I cannot. I am currently conducting learning-style research in an attempt to discover if this approach is actually damaging to any of my students. Student evaluations indicate that while some students actively enjoy the emphasis on and value assigned to their own contributions to the class, others miss the more structured approach that they have been taught is appropriate for the classroom. Criticizing these students as immature demanders of educational spoon-feeding gets us nowhere; we need to find more creative ways to stimulate their own self-discovery. (We also need to continue the opportunity for educational exploration that some of these students had in the early grades, but have been deprived of as they matured.) I have, however, had the privilege of watching some of these students rediscover the joy of learning, moving from nervously dipping a toe into the ocean of knowledge to wading in at least up to their knees. And for those who dive in, even if they choke, spit water, and have to catch their breath before they strike out on their own, I feel both joy and admiration.

I had not consciously set out to deal with two of the most difficult problems in contemporary pedagogy when I began to change my teaching style; I had only asked myself what I wanted from my students and from myself. Since I demand a lot of my students, I wanted a solid working relationship with them that fostered their

independence and love of learning without any hint of condescension or 'dumbing down' of the curriculum. I wanted students in my classes who learned and could use the skills and information I was offering them, who approached learning as a joy rather than a punishment for being young. I wanted to be enlightened, entertained and stimulated by their work. What I got was even more than I had dared to hope for: students who have learned how to learn, and who communicate their learning, and their enjoyment of that learning, to others, including myself. In fostering their creativity, I find that I have also fostered my own. It is a profoundly satisfying experience.

Endnotes

A. I use the terms 'foster' and 'emulate' in the sense developed by C. A. Hilgartner in "The Structure of Empathy," pp. 17-19.

B. In the forward to *A Theory of Meaning Analyzed*, Alfred Korzybski and M. Kendig diagram the difficulty of changing behavior without first changing the assumptions underlying that behavior, and state the value of "making unconscious assumptions conscious" (pp. x-xii). This diagram has frequently been reproduced on the cover of the *General Semantics Bulletin.*

C. I have merged the responses to this and the following questions from teachers at the International Conference on General Semantics, New Haven CT, July 1988, and at the English Council of Central Ohio, Columbus OH, October 1988.

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My definition, then, of the creative process is that it is the emergence in action of a novel relational product, growing out of the uniqueness of the individual on the one hand, and the materials, events, people, or circumstances of his life on the other....

The action of the child inventing a new game with his playmates; Einstein formulating a theory of relativity; the housewife devising a new sauce for the meat; a young author writing his first novel; all of these are, in terms of our definition, creative, and there is no attempt to set them in some order of more or less creative.

Carl Rogers
Toward a Theory of Creativity

BLIND MEALY WORMS*

RALPH WESSELMANN

Stories of Love?

The equations of science can create a sense of beauty in the learner: Pythagoras's theorem — X squared plus Y squared equals Z squared — has excited many a young math student. And certainly the simple-sounding equation of Einstein — $E = MC^2$ — has been viewed by many a physicist as elegant. But such equations are not equations of the heart. Science equations serve us to get done the work of the world. They set straight our property lines or enable us to hit the orbit of Mars. But they do not teach us the ways of loving. To teach love, teachers of our culture have used stories.

During the sweltering summers when I was growing up in Albany, N.Y., my gang of a half-dozen adolescent boys would swim in the Normanskill Creek. Our parents had forbidden us to swim in the creek, saying it was too dirty and too dangerous. But we could see from the presence of a fifty-foot cable hanging from a great elm tree on the bank of the creek that other 'older' boys had swum there and successfully, so we disobeyed our parents and swam there ten or twelve times a summer. Stripped to the buff, we would race down the bank, swing way out over the pool of dark brown water and drop a second or so to plunge into some fifteen feet or so of water. We boys spent many a boisterous hour dropping or diving into those warmish waters of the Normanskill. To us the creek, the pool, was for swimming. After all, isn't that a creek's use? And so what if occasionally we bumped into some toilet paper with the turd still wrapped whole? It was our swimming place! The name was Normanskill Creek, and a creek is a place for swimming. And so we swam, but not in a swimming place; we swam in a 'toilet'. Upstream

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an open sewer fed its filth into the water. To ignorant boys it meant nothing then, but today, to this man, it means an example of someone having smeared his shit on me.

Forty odd years later, I had a week of experiences so startling that two papers have come out of it. During one week in May, 1984, I observed a millionaire cheating at poker; a group of businessmen who to a man agreed that in order to stay in business one had to cheat on his income tax and that keeping two or three sets of books for such purpose was only smart business; an airlines travel agent who promised that she wouldn't tell on me if I got paid twice for unused tickets because as she said, "After all (ha-ha) I'd get paid twice too"; a stranger, a young man who came late to my door, interrupting the last few minutes of the sixth Celtics-Lakers championship game, to 'borrow' some gasoline but who drove off with my 'borrowed' ten-gallon can as well. Each of these examples is merely a more abstracted example of a person wiping his shit on me.

But what happened on Saturday made me consider what this means to me as a teacher in an American public school in upstate New York. Saturday's *Woodstock Times* carried the report that twenty-three young people had been arrested in a drug bust in Woodstock, N.Y. The list of names included eighteen former students. Some of those students had been in my classroom. None of them had heard me speak to the subject of manners, morality, obligation, duty, consideration for others, yet I have been an English teacher for thirty years and during my early years I used to teach to those points.

And I asked these questions: "As a teacher of clear thinking and of good will, what should I have done during the time some of these students were with me in my classroom? What should all of my colleagues have done to clarify what was at stake when these new members of our community risked prison time, fines, and disgrace to their families?"

Stories of love? Yes.

Crossing a Threshold

Blind mealy worms eating and defecating their way through the flour that sustains them cross a threshold when the poisons of their defecation predict their deaths. Yes, they are still alive and eating as they cross the threshold, yet they are unaware that their deaths will be soon... and certain. Sea fish and shellfish living in the harbors along the Atlantic coast eat and breed in the poisonous swill that we pour by the million tons into their waters. Yes, they are still eating and breeding, yet they are unaware that their extinction from these waters will be soon... and certain. Forests dropping their seed in the acid conditions produced by our fouling their air may have passed that threshold that guarantees their death just as surely as it guaranteed the demise of the great forests of Europe.

Six million Jews in Nazi Europe in the 30's and 40's went about their daily business arguing, wheedling, offering, refusing, compromising, making their small boasts and little gestures. Alive, yes, yet unaware that they had crossed a threshold when they were declared by the Reichsfuhrer to be 'lebensunvertes Leben'... life unworthy of life. Alive for the moment yes, but with the 'Sonderbehandlung'— the special handling, the 'final solution' — their deaths would be soon... and certain.

In our personal time, bounded by our individually small pain, we worry about our indigestion, car payments, the confusion of our relationships with six or eight persons in our homes and the two or three buildings where we do our work. This is what is most important to us, and while we know vaguely that our nation is not much good any more and that we have earned the epithet in the world abroad as the 'Ugly Americans', we don't believe these problems to be half as important or of as immediate concern to warrant our spending our time acting to prevent the crossing of a killing threshold. I say "acting to prevent" as if I believed with some

certainty that we have not crossed our threshold. I harbor great fear that we have, but if I don't act 'as if' we haven't, I should have to adopt the creed of a character in the novel, *Knock On Any Door*: "Live fast, die young, and have a good-looking corpse."

As Americans we are aware that in our nation corporate men and women steal billions of dollars a year, that corruption is rife among our politicians, that the KKK and other fascist groups are on the rise again, that blacks are losing their significance as fully enfranchised Americans, that women continue as second-class citizens earning sixty cents on the dollar for their work as compared with men doing the same work. We are aware that our people turn more and more to drugs to help salve the pain of insignificance and the lack of love in their homes and their workplace. We are aware that fewer and fewer of us select our leaders and that more and more of us confuse crude militarism with patriotism. We are aware that generation-long problems such as environmentalism and nuclear proliferation are treated as merely 'special-interest' problems.

So would it surprise you that the next generations of children might, as B. F. Skinner put it, "live beyond freedom and dignity?" Certainly in a nation that sees its national leadership mark billions for secret operations, in a nation that hears political arguments reduced to slogans and cliches, in a nation that gives no protection to whistle-blowers on waste and corruption in the military-industrial complex and where loyalty to the company is prized over loyalty to one's society, and, paradoxically, in a nation where rugged individualism of the form "Do your own thing" is prized almost to the exclusion of the common good, no one should be surprised that our increasing indifference permits the decline of our nation and perhaps the demise of the world.

Why do we behave with such indifference? I want you to consider that it may be that as a people we are not deliberately trained to love. And because our homes and schools do not set out deliberately to train our nervous systems in loving, we see the consequences of lovelessness in the statistics about family breakdown

— a 60 percent divorce rate, single parenting, latchkey kids, a rising crime rate, abusive television content, racism, anti-semitism, drug abuse, environmental destruction, as well as that general rudeness that I describe as "I don't care if I rub my shit on you." Stand on any busy street corner, as I have, and count the number of our people 'rubbing their shit' on others.

Splinter-Minded Students

Although we might point to many causes, I believe a primary cause is this: Our schools focus the evaluation of education's purpose almost exclusively on teaching our children how to get done the work of the world. So long as we can point to high test scores and scholarships won or honors received, our superintendents of schools and boards of education beam happily. But consider this: if we graduate students who are able *only* to do the work of the world and who are able *only* to communicate sentences that achieve *only* this getting done the work of the world, we create splinter-minded men and women who are sane only in the workplace focusing on work and unsane elsewhere — in their living rooms and in their bedrooms. I call them splinter-minded because their expertise goes very deep — admirably deep — in one area, but in other areas of their lives they are babies — emotionally crippled men and women. They are not trained *to want to work together.*

The language of those schools that have only the purpose of getting done the work of the world, I call SCIENCE language. It is objective language; you do not have to get involved. Such language is an indifferent language; it doesn't give a damn for the feeling state of the listener; it doesn't CARE about the listener. On the other hand, the language that cares, that teaches us to want to work together, that teaches the employee to love his boss and for the boss to love his employee, I call LITERATIVE language. (You will find these terms first defined in Hayakawa's seminal work: *Language in Thought and Action.*) I point out to you that *these definitions are not your typical definitions.* I use them for the purpose of

establishing a continuum of feeling states ranging from indifference to deep concern. Science language of the sort "A squared plus B squared equals C squared" is indifferent to your feelings. Literative language of the sort "I love you" is obviously richly concerned with your feelings. Most sentences are mixtures of the two types. My point, however, is this: Too many of our teachers neglect the LITERATIVE language and think themselves successful if they are able to communicate the equations that help one to do the work of the industrial world.

All teachers must teach LITERATIVE language for two major reasons: self-understanding and social cohesion. But because such language, such values, are not expressed in our curricula, our schools are in disarray, tensions rise, violence appears in our halls, morale declines as our moral sense decays, teachers look the other way on matters of behavior, students conclude that 'anything goes,' students cut classes because there is no emotional cement — no sense of *Familia* — family. Administrators express standards of right and wrong as legalese, principals refuse to take strong stands, and they express their feeling-state as "keeping the boat afloat 'til June." Administrators express their legal and technical view of responsibility in the phrase "Cover your ass." These men and women avoid engagement or demands in the way of either moral or intellectual standards.

My school has lost its legitimate democratic authority, for teachers and principals, superintendent and board of education do not discuss in any form or any forum methods of teaching virtue. Any move in this direction is met with scoffing cynicism or bland non-response. And the inevitable consequence to children appeared in the graffiti that appeared on the broad wall of the gymnasium: ------- ---- SHALL DIE (the superintendent's name was scrawled in the blank) and on the entrance to the high school wing: LOSE ALL HOPE YE WHO ENTER HERE — DANTE. (The entrance to hell.)

Sex, Eros, Philia and Agape

Rollo May, the existential psychiatrist from Harvard, taught me a useful paradigm of love in his book, *Love and Will.* He defined four kinds of love in the Western tradition: Sex, Eros, Philia, and Agape.

Awash with SEX on our television screens, our young people find some schools afraid even to mention the word condom, so sexual love remains untaught except in the technically explanatory and indifferent form.

EROS is the love that drives us to procreate, to reach a higher plane of relationship. In our schools talk of EROS is absent.

PHILIA, the love of friendship, has for the most part vanished from our society. We find ourselves so rushed, going from work to meetings to dinner to bed and to work again in the morning, that the feeling value of friendship — PHILIA — as a contribution to our lives is lost. Or, as Rollo May points out, mistaken for homosexuality. Unlike European men who can be seen with their arms about each other, American men fear male friendship because of the possible hint of homosexuality. So in our schools we find it unmentioned although the importance of philia is very great in helping us in the chum period of adolescence to establish a base of identity.

But it is AGAPE that is most certainly missing in our culture and therefore in our schools. Agape is that esteem for the other, that concern for the other's welfare beyond any gain that one can get out of it; disinterested love that does not ask "What's in it for me?" It is typified in Western thought by the sacrifice of Jesus on the cross. "God so loved the world that he gave his only begotten son, etc." CHARITY, as the word is translated in the New Testament, doesn't do the job, but it does contain the notion of selfless giving. Such selfless giving is anathema to those in our culture who have since the 1960's made an idol of the notion "Do your own thing." Most

Americans think it foolish to act selflessly. They are suspicious of the notion of altruism at best and scornful of it at worst.

No human motivations are purely disinterested; everyone's motives are a blending of these different kinds of love. No one wants to be loved purely 'ethereally,' without regard for the body and without an awareness of maleness or femaleness. And in growing up one learns not to want to be loved *only* for his body. A child senses the lie when he is told that adults do something "only for your own good," and everyone dislikes being told he is loved only "spiritually."

But my point is this: Each kind of love presupposes CARE, for it asserts that something does matter. In normal human relations, each love has an element of the other three. Yet today, I regularly hear from many of my friends: "Wes, I feel so empty; I don't even like sex anymore." I take these words as identifying the emotionally crippled, splinter-minded man.

Today's schools are vitiated by primitive methods of evaluation. If behavior cannot be quantified, measured, it will not be valued. But Alfred Korzybski said: "Human consciousness, criteria of values, and behavior cannot be based on statistical averages."

If It Is Not Too Late

What must we do?
Assuming that we have not like blind mealy worms crossed our threshold, that we have not, as Korzybski was fond of saying, boiled our eggs and, therefore, cannot reverse what we have done to ourselves through our use of primitive methods of evaluation, we must:

1. Choose from our culture leaders/teachers who are gifted with keen intellect, good will and broad humanitarian interest, and to pay for this we must offer these men and

women salaries commensurate with the salaries paid by private industry.

2. We must insist that our teachers speak a LITERATIVE language in the classroom using literative terms daily — *concern, caring, charity*, etc. and they must do this *not* in an oh-by-the-way fashion but with focus in all our classrooms — math, science, history, language. *All* teachers are teachers of good will.

3. We must evaluate and reward the success of teachers not just on the basis of how many of their students score high on standardized test — tests that measure how well they are able to do the work of the world, but also how well they have fostered, nurtured, and allowed their students to develop feelings of responsibility, even duty, toward others and *toward the future.* If students work together with FAMILIA, that teacher deserves the highest praise. If students with high ability help less able students to understand important processes, that teacher deserves highest evaluation.

Feelings of belonging must be satisfied. As human beings we have *unconscious*, silent-level organismal longings which must be satisfied. If these feelings are not satisfied in our schools, these schools are places of indifference — Dante's hell, our hell.

From such hells come behaviors of violence, murder, rioting, revolution, war. From such places come behaviors of escape into drug abuse, child abuse, wife battering.

Unless your child hears words of affection — love, loyalty, friendship, community, care, concern, charity — seize him and run, do not walk, to the nearest desert island; ah, but do not expect to be safe even there from the shit of our culture, for daily reminders will be swept up on that beach as we blind mealy worms defecate on our land, in our air, and in our waters.

If we are to stop fragmenting as a society, the indifferent motif, "Do your own thing" must become a caring motif, "Do your own thing *to the benefit of others.*" Our schools must help the family turn it about.

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Ralph 'Wes' Wesselmann grew up in Albany, New York. His education at State University of New York at Albany was interrupted by four years as a weatherman for the United States Air Force. "While stationed in Japan in the mid-fifties, I had the good luck to be a member of the B-29 weather-bomber crew that through air sampling proved that Russia had exploded an H-Bomb. Our flight made the front cover of either *Time* or *US News and World Report.*"

Wes earned his A.B. in English in 1960 and completed his master's degree two summers later. From 1960 to 1989 he taught high school English, speech and theater at Onteora Central Schools and helped his wife Eva rear three girls and a boy. In 1970 he won the Golder Pairs national bridge championship. "As a consequence, I was invited and accepted the role of bridge teacher on the Italian Liners, the Cristoforo Columbo and the Michelangelo, for two summers. Around 1973 I gave up tournament bridge because of what I perceived to be cheating permeating upper-level bridge play." For the last ten years he has been a trustee of the Institute of General Semantics and a regular contributor to its seminars.

What should be understood when people tell us that certain statements ar "scientifically true" is that they are useful and verifiable formulations, suitable for the purposes of organized cooperative workmanship. What should be understood when people tells us that the plays of Shakespeare or the poems of Milton or Dante are "eternally true" is that they produce in us attitudes toward our fellow men, an understanding of ourselves, or feelings of deep moral obligation that are valuable to humanity in any conceivable circumstances.

S. I. Hayakawa

SURVIVAL DEPENDS ON CARING, SHARING*

DOROTHY R. BERLETH

I hope that you have already read Ralph Wesselmann's chapter, "Blind Mealy Worms," in this book because I want to take the points he made as given in our frame of reference.

My second reason is to be certain that I give credit where it is due: Much of what Ralph Wesselmann and I write grows out of our years as colleagues sharing joint concerns. We developed a wealth of curriculum material that we continue to use in co-presentations at general semantic conferences and seminars. We may have taught in separate classrooms, but we were jointly committed to the materials and approaches we used!

I do not presume to tell you how to incorporate general semantics into your curriculum. Rather, I ask you to consider how your classroom can most effectively be a place for the development of caring, loving persons who will want to reach out to others. I ask you to focus on what is termed LITERATIVE language in establishing a climate for learning — whatever the subject or grade level — whether or not you are a classroom teacher. The techniques hold true in any director-directed relationship.

Make time at the beginning of a class, course, or workshop to establish the sense of FAMILIA — to create a climate in which each individual's success *matters* to each other person. This may seem like a waste of time, time that is hard to feel comfortable in stealing from the enormous amount of content to be mastered before THE TEST — whatever form that test may take. You may feel uncomfortable at first spending class time in 'getting to know you' activities, especially since you must abandon the teacher-in-front-of-

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* Based on a presentation to participants at the Summer Seminar Workshop of the Institute of General Semantics, Alverno College, Milwaukee, Wisconsin, July 1989.

the-rows-of-desks position so natural and so orderly, so comforting a sight to administrators who take it as visual evidence of classroom control. Yet group activities lead to a sense of unity. Group activities pave the way for working in groups. You will find this time well stolen, for when a class develops a sense of family, concern for others' well-being will reduce *your* teaching/remediating chores dramatically; students will help and care about helping their 'family' to learn.

Take time, too, to appeal to and help your students develop their auditory imaginations. I believe that there is something wrong about our reading development programs in the primary grades. Many children begin school with a rich background of parental 'reading-to.' Like my children, they have known the joys of snuggling up for 'A Read' before bedtime. They chose the book-of-the-night, often the same one for weeks running. Surrounded by warmth and uncritical attention, they heard the stories; they heard the voices of the speakers. They 'knew' how the wicked witch sounded. They developed an extremely important life skill in doing so. Their auditory imagination let them hear the sounds in their heads. And much of it was poetry: Early on, the charm of rhyme and rhythm, simile, metaphor and imagery captivated. They came to recognize that it wasn't so much the words which were spoken that mattered; it was the tone, the intention, the speaker's 'spin' on the words that gave them meaning.

Then came school! Oral reading was not prized. The rush was on to teach the skill of independent reading. First came reading aloud so that the teacher could know that the child was 'really' reading. Then came silent reading with the rush to stop lip reading, then the push to stop vocalizing in the throat. Speed and efficiency were the goals. Comprehension was equated with knowing a sequence of events. Did the child know what happened? (The boy's dog died.) Fantastic! How did the boy feel? Well, not worth too much class discussion. Of course, there might be a multiple choice question: When the boy's dog died, he felt: 1. mad, 2. glad, 3. sad. Yet the

life skills required in answering the question of feelings are most important to our successful relationships with others.

To put our efforts into context, perhaps I should go back to the origins of general semantics in Korzybski's definition of humans as the "time-binding class of life."(1) Time-binding refers to the unique capacity to pass the products of our creativity from one generation to the next. Through language, other symbol systems, and artifacts, we can use minds and nervous systems miles and centuries away. One generation can begin where the last one left off.

As the time-binding class of life, our survival depends on interdependence, cooperation, caring and sharing — drawing on the past and contributing our share to future generations.

Teachers play a special role in the time-binding process. They teach the wisdom and knowledge of the past and prepare and motivate students to contribute their share to the time-binding process.

Most of our art, music, literature, math, science, inventions, philosophies, ethics, and morality, etc., have come to us from centuries of creative people we call our ancestors, from every culture and every part of the world. We learn from errors of past generations as well as their positive contributions. We can hardly look at the vast bounty we have 'inherited' without feeling an obligation. I call on you to accept the ancient and honorable mantle of *noblesse oblige*. You must <u>do</u> something!

The term *noblesse oblige* makes some people uncomfortable. At one time, the term was an honorable one — indicating that those who had more or knew better owed, by virtue of their position, care and service to those less fortunate. Somewhere in the course of history, the term took on an elitist, snob, connotation — as if those who practiced it were somehow to be patted on the back as 'do-gooders.' Not so!. In the sense in which I use the term, it specifies the obligation of the individual to share his expertise, knowledge,

skills, awareness, and concerns with his society, to enhance the time-binding process.

What to do? I suggest that Ralph Wesselmann's advice: Run, do not walk, to the nearest desert island, is impractical; for even there you will be unsuccessful in isolating yourselves from the sewage of our culture. You must stand and fight in an arena in which you stand a chance of making an impact. Every one of you lives in a school district, and every one of you owes a concern to the district in which you live. You have expertise. You may have both interior access through your faculty position and exterior access through your position as taxpayer and, for some, parent. Whatever, you have access.

I think American schools are in trouble — not *your* classroom, of course — but American education in general. If schools are in trouble, our children are in trouble; our future is sliding into a morass of serious slime.

Schools flounder in the Back-to-Basics movement.

Multiple choice items evaluate one's critical writing skills.

'Competency' tests for high school graduation are a bad joke.

Add to this the fact that education receives short shrift in the job market. Walk out of a college or university with a B.S. in computer science, enter industry, and realize a beginning salary of twice what a beginning teacher of the same subject can realize. And, if I were to teach the computer science classes that led to the degree, I would have to know at least as much as the programmer I'd be teaching *and* have some expertise in how to convey that information to others besides. Notice the irony.

Much is written lamenting our declining cultural literacy. We have clearly lost the myth structure which bound us as a culture, at least into the early 50's. Frames of reference which the 'common' man

could be expected to recognize no longer exist. For instance, I can no longer confidently refer to Lent, Good Friday or the symbolism of the lily with my high school students. Reference to the Great Flood or the Emancipation Proclamation or the Vietnam War does not elicit a usable reservoir of awareness in my students. We lack shorthand to convey a richness of meaning through an allusion.

Bemoaning this loss was the basis for E. D. Hirsch, Jr.'s *Cultural Literacy: What Every American Needs to Know* (2). Without taking on what Hirsch has chosen for his list, and without arguing for additional inclusions, I'm worried about the use I perceive being made of his list. I see 'the list' being taught as if each item (noun) were just an additional vocabulary word. *Comprehension* is not important; definition is. The message is this: There's too little time to investigate the Civil War; just know the dates. Don't experience the emotional involvement of *Hamlet;* just be sure to be able to identify the characters. Instead of sharing, if only vicariously, Ophelia's suffering confusion, just 'know' that she drowned (herself) while floating downstream. (She also named a lot of herbs and their significance.)

Highly touted thinking skills and critical thinking strands too often aim to arrive at the teacher's 'right' answer: Think 'critically' and come to the same conclusion as the instructor, and voila! there's a critical thinker! There is little opportunity for an open-ended response, even less for responses which do not follow a narrow chain of reasoning.

'Content' too often becomes a laundry-list of 'facts.' As teachers, we're told, "Don't get too involved. Don't get sidetracked. We must get *all* American history 'covered' this semester." There simply isn't time for the luxury of wallowing in the details of a particular event or era that might excite the students. To do so means you miss the blink of time set aside to 'cover' the Depression.

I invite you to read these questions which come from actual mastery exams.

1. Vasco de Gama sailed for:
   1. Spain
   2. Portugal
   3. England
   4. France

2. What is *the* right way to show that, if two sides of a triangle are equal, their opposite angles are equal?

The first question asks for simple recall. True, recall is a useful level from which to begin understanding the whole Era of Exploration. But mastery? Of what? A list of names and countries? Big deal.

The second question assumes *a* right answer. This question, called the *Pons Assinorum* (bridge of asses), was, for the monks of the Middle Ages, a determining factor in whether a student remained a student or became a monastery reject. Yet over 300 correct proofs exist in a volume on the subject published by the National Council of Teachers of Mathematics. Some of these solutions are more elegant than others, but they all answer the question correctly.

You know the kind of testing I'm talking about, and you know it's not right. And I know you know it. Our youngsters — ours by birth and ours by virtue of our being time-binders — need your guidance now! Much of their learning is being manipulated in order to make our schools look good on paper. We know how to manipulate statistical results. We know how to manipulate test outcomes. Administrators, boards of education, faculties can even make the public experience a glow of snugness by controlling who is given what test.

To do anything, you must make an end run out of the classroom and out of the building and put on your concerned citizen/taxpayer hat. Dig into programs that exist on paper and then examine the reality. Are there offerings for Advanced Placement, Critical Thinking, Gifted/Talented? There should be. If they exist, are they what they

purport to be, or are they used as vehicles to get across more facts faster?

Take a look at programs designed for the slower student. Do they really remediate reading, writing, thinking skills; or do they focus on inconsequentialities? I know, for instance, that students who write poorly often spend remedial time in workbook exercises that culminate in whether *who* or *whom* correctly fills in the blank. Does it really matter? Will the student then be able to communicate? Is it fair?

Those consigned to the lower-level tracks often arrive there by virtue of unwillingness to conform to years of traditional instruction, instruction which begins by turning them off with material which bears faint resemblance to the realities of their experience and then makes sure they never turn on again by forcing them to accept upper middle class values. When their reading is about nice mommies (who may have professional careers or important office jobs) who give their children quality time, and their experience is a mommy who takes off for sunny Florida with her latest boyfriend, do you wonder at their rejection of the whole scam? Story daddies play ball, take boys fishing, help around the house; 'real' daddies go out with the boys, stop for a few at the local old-boys tavern, wolf down a warmed-over meal and sink into fitful snoring before the tv.

Get involved in shaping the school's environment, the environments of the classroom. Start worrying about the ambience in which children are being taught. Look for ways in which each individual is treated with respect and granted dignity. Work to create a climate of care and love.

We know that we must develop a sense of community in each person so that he will want to work and live in harmony. We must demand that education focuses first on caring, sharing and giving, on empathy, before we worry about 'the facts.' Our children must learn the language of the heart.

No matter if you are a teacher, administrator, member of a board of education. No matter if you are 'only' a taxpayer and/or parent. If you do not want your world to continue to flounder, to drift toward violence, murder, uncaring destructive behavior, you must become actively involved.

To you falls the mantle of *noblesse oblige.* You may not abandon your obligations. You must do something!

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Dorothy Berleth claims she has managed to cram fifty-five years of living into fifty-five years of life! "Along the way, I have contributed in such diverse ways as writing a weekly newspaper column, being a life guard, directing summer recreation programs, working in a library and cleaning houses. I got briefly into obedience training for dogs (if you met our current 'brat', you would doubt this), serving on boards for a library and a nursery school, as grievance chairman for my union unit and serving as president of same."

"Professionally, I began teaching at the secondary level in 1956, and will turn in my chalk in June — to go on to other things. For over thirty years, teen-aged students have enriched my life immeasurably. The full spectrum of ability has been mine, from the honors student to the nearly retarded, from the all-American stereotype to the volatile, emotionally disturbed.

"I am still married to the same man unto whom I plighted my troth in 1957. We are proud to have sent three strong, coping, caring women into adult lives in this not-so-sane world. In retirement, I hope to participate more actively in the activities of the Institute of General Semantics."

On the basis of my experience I have found that if I can help bring about a climate marked by genuineness, prizing, and understanding, then exciting things happen. Persons and groups in such a climate move away from static living toward process living, away from dependence toward autonomy, away from defensiveness toward self-acceptance, away from being predictable toward an unpredictable creativity. They exhibit living proof of an actualizing tendency.

Carl Rogers
A Way of Being

THE EDUCATION OF AN IGNORAMUS

ANN KERWIN

We begin life with the world presenting itself to us as it is. Someone — our parents, teachers, analysts, — hypnotizes us to 'see' the world and construe it in the 'right' way. These others label the world, attach names and give voices to the beings and events in it, so that thereafter, we cannot read the world in any other language or hear it saying other things to us. The task is to break the hypnotic spell, so that we become undeaf, unblind and multilingual, thereby letting the world speak to us in new voices and write all its possible meanings in the new book of our existence. Be careful in your choice of hypnotists.

Sidney Jourard

A Child in an Adult World

There were few things in childhood I knew with such clarity as this: the-world-I-lived differed fundamentally from the world of adults.

Experience, as I knew it, was phenomenal. The regularities I discerned — shapes, smells, sunlight, feelings of 'recognition' — were themselves fluid. Some rooms, people, backyards, and carpets seemed familiar; still, they were not the *same* moment to moment, light to dark, mood to mood. Nor was I. I was the center of my experience but not the sum of it. At some point I knew that my crib was not I and that my waking did not cause it to exist. Other beings were not I. They did not have my feelings... they had their own. They could help me miraculously or hinder me; they could and did countermand my decisions. Some beings were more sinister than others. Except for my mother and dog, most were intermittent phenomena: solid at times ('whole' and 'there'), at other times spectral. Sometimes they were one with light or shape or smell, at other times distinct — even shatteringly intrusive. I could not escape others entirely. Nevertheless, I felt singular, insular much of

the time. I lived-my-way, conscious of wonder, desire, terror, piq ue and ecstasy, of embarrassment, mystery, unease, revery, self-consciousness and frustration.

As I grew older, I paid more attention to adults and their ways. I studied and emulated them. What perplexed me chiefly was the assurance they manifested in the face of 'experiencing.' Grownups seemed to understand the welter. Even those I did not respect — and there were some whose pronouncements or conduct seemed untrue or unworthy — could sort happenings. They could distinguish between transient and perduring, related and unrelated, quotidian and alarming aspects of them. How they did this I could not fathom. Although I scrutinized what-went-on with desperate punctiliousness, I could not read it as adults did; I missed things. **But how I hated not-knowing! To be ignorant was to feel alien, dense, and inferior. It left one liable to condescension, derision, and subordination. How I yearned to attain what knowledge conferred: authority, assurance, autonomy and respect!** But how? Was all-this-I-encountered-and-beyond unfathomable in itself, I wondered, or was it I who lacked the gnosis to penetrate it?

After more study, I concluded that words were essential to the adults' epistemology. Often grownups explained experience to children in this way: "That _____ (*phenomenon*) is a _____ (*word*)." For adults, to **name** something seemed, in large measure, to **explain** it. Not entirely, of course; additional words about the function, characteristics or outcome of _____ might prove necessary or helpful. Over time, their words painted a picture,"The-Landscape-of-the-Universe-from-the-Point-of-View-of-the-Adult," which I struggled to assimilate. Their word-portrait depicted:

- a '*world-out-there*' (also called 'reality') existing independently of adults and me;

- an *order of things* in the world (which is the order ***of the world*** and **not** of, or imposed by, the observer of the world);

- *laws*, governing the world's operations and order; (these humans discern [by observation] but neither alter nor construct);

- *classes of 'things-out-there-in-the-world,'* such as: physical object, mental event, emotional state, spiritual belief, the natural world, the supernatural world, the present, science, superstition, fact, myth, logic, art, reason, the abstract and the concrete; (there are others as well, all objectively discernible).

The world adults saw and discussed was not as blurry as mine, nor as terrifying, marvelous, or plastic. I believed, by this time, that they and I talked about the same objects often, even when it appeared that we saw, experienced, interpreted and referred to them differently. Generally, I bowed to their superior understanding. But not always. Adults, or many of them, seemed to suppose that experiencings are expressed by, or reduced to, words. But words, I felt, did not encompass, characterize or communicate many significant experiencings. Even a child could see that grownups might apply the same word to disparate phenomena, only to miss, thereby, the 'thisness' of a revelation: its 'quintessence' and warrant for notice. The word 'dark,' for example... how could that slim word 'stand for' or communicate:

[**Caveat:** the following word-pictures do not capture what I remember experiencing; while this inadequacy illustrates the incommensurability of language and experience, a thesis I promote, it also requires readers to evoke significant dark-experiencings-for-them.]

the cool, delicious envelope under the special part of the tree which, on sunny days, soothed me;

the brooding shadow behind the chair, teeming with malignancy, which threatened to follow me;

the bedroom stage for dancing shadows, phantom mists and colors materializing after lights out and before sleep;

the blinding, painful dark of too-bright-light which left me reeling and foolish;

the medium of night-terrors, so thick with horror that the dark-remembered rekindled torment;

the dull, pulsing enclosure of humiliation, failure, rejection, and loss;

milky, caressing, moony-magic night skies;

heavens-so-black-the-stars-glowing-sparkly-points renewed ties with the infinite;

the place where the cat died and sunlight couldn't douse it, no matter what others said;

the place where I hated myself;

the place where I enjoyed myself: the private retreat where I created.

Even a child could see that such powerful, formative and lingering experiencings have in common not even the absence of light. They look, feel, and reverberate distinctively. What puzzled me was that adults, despite their general sagacity, registered no loss at converting such experiential riches into a verbal pittance. 'Dark' is a pathetic token of so much of such importance.

Years later, I learned of cultures in which experiences of paramount importance are not mentioned: this to observe and preserve their

sacredness. In the culture in which I was raised, conventions of not-mentioning also reflect and reinforce cultural values. My culture does not honor experiencing. We, whom it rears properly, learn to tether our capacities to notice and enjoy to the expressive capacities of our language: a language sadly incommensurate with the rich, varied and vital processes from which we draw, and ultimately shape, the possibilities and actualities of our lives... of our culture... and, to some extent, of our species. In virtue of my ignorance (of adult ways) and understanding (of my-living), I stood outside adults' reality, wanting-but-not-wantingto get in. To stay out was to lose: cachet, plausibility, eventual autonomy. To jump in was to lose: that delicious, seemingly private realm of possibility and delight: the extended now.

The Hypnotic Tyranny of Words

I have confessed to skepticism with respect to linguistic reductionism. I confess also to having succumbed to the power, promise, and pleasure of words, lures which masked, in part, their hypnotic tyranny. Long before I attended school, I could speak; I could see, hear, touch, taste and feel. But I could not read. And I ached to do so. Through the vehicle of print — whose code I could not break by the most diligent detection — grownups discovered and shared secrets beyond my ken. Even books they read to me contained ideas, lands and characters I could not have imagined or inferred. Even the pictures transported me beyond the investigative range of my senses and experience. Adults talked about what they read in books, newspapers and magazines. So much they said was wondrous, and reinforced by photos and illustrations also wondrous, I began to believe that adults really *did* understand the world and that I, too, would gain knowledge, when I could read.

In fact, reading opened more than a world to me. It opened worlds. Fiction, history, biography, science, poetry, philosophy: all were adventures. My reading was, to a large extent, a private enterprise. Through it I regained some of the magic, expansion, elation, and

inquiry of earlier days. At the same time, I imbibed assumptions about language, thought, reality, identity, relations, observation, value, division, quantity, quality, purpose, and more. Had I been more alert, I would have identified some as the once-suspect cornerstones of adult ideology. But I was hypnotized. Gradually, imperceptibly, I substituted for my own perceptions a world view sanitized, regularized, compartmentalized, and homogenized: one at odds with my daily experience. I continued to question, but only *within* the language, logic, limits, and axiology of received paradigms. So pleased was I to learn, and so anxious to be correct, that I became an adult before my time. That is to say, I became a good student.

Becoming an Ignoramous

In that capacity, I learned to disdain ignorance. Associating it with 'stupidity,' 'sloth,' 'aversion to thought,' 'prejudice,' intellectual vice and vacuity, I came to revere knowledge as the true end of education and to despise ignorance as its foe. Shamed by my nescience, I hid it. I grew to prize certainty and to war against ambiguity, complexity, and uncertainty. In the process, and without my active consent, I stifled my self-confidence and creativity, powers which regenerated only late, remedially. After years in graduate school spent studying philosophy — after having observed thinker after thinker ablely demolish opposing views, propose and justify his own, only to meet like treatment in the next round — I excused myself from this dance of Western epistemology. I became an avowed ignoramus. I began to co-teach, in a reputable medical school, courses in ignorance in a Curriculum on Medical Ignorance and to offer Honors seminars on the topic. Occasionally, when asked, I speak and write about ignorance. But I am careful to point out that, personal acquaintance notwithstanding, the topic is inexhaustible and I am no expert...

Ignorance and Knowledge

A little unlearning goes a long way.

Richard Kehl

The authority of those who teach is sometimes an obstacle to those who wish to learn.

Cicero

Why do I teach about ignorance? Why do I encourage my students to see themselves as unknowers before the great unknown? For therapeutic reasons. To counter what I perceive to be unhealthy notions about knowledge, ignorance, reality, and self which, I fear, hinder our learning — as individuals, culture, and species. I emphasize intent for two reasons. First, therapies are contingent and contextual; I suggest nostrums for specific epistemic maladies; should conditions change, or I misdiagnose, proposed remedies may not work, or may harm. *Caveat lector.* Secondly, I neither present nor presuppose a complete, systematic philosophy, nor have I personal or practical wisdom to purvey. **My aim is to direct readers to their own capacities as learners, reminding them that they, in part, create their powers, limits, pleasures, and promise.** If, as I hope, I serve that end, readers will see my thoughts as hollow and inadequate in and of themselves, as transitive, ultimately self-immolating constructs. Chang-tzu wrote:

The fish trap exists because of the fish. Once you've gotten the fish you can forget the trap. The rabbit snare exists because of the rabbit. Once you've gotten the rabbit, you can forget the snare. Words exist because of meaning. Once you've gotten the meaning, you can forget the words. Where can I find a man who has forgotten words so I can talk to him?

I aim to introduce readers to 'ignorance' so that they can forget it.

* * * * *

We learn nothing from the things we know.

John Cage

According to Western philosophers, ignorance is a *privative* concept. That is to say: ignorance is the want or lack of something. Of what? Knowledge.

What, then, is knowledge? This seemingly innocent query has been a philosophical 'tar baby' for over two millennia. Countless theorists have proposed answers, defended and debated them, many brilliantly. And yet, an incontrovertible account of knowledge, and its mate, ignorance, has yet to emerge.

Consequently, the conventional definition of ignorance (lack of knowledge; non-knowledge) raises more questions than it answers. Some Western philosophers, most prominently those of the analytical school, persevere, through clear, careful reasoning and expression, to correctly define and demarcate knowledge and non-knowledge. Phenomenologists seek such clarity as can be attained within the compass of the hermeneutic circle. And Zen sages laugh... and ply us with koans until we understand — but neither know nor care to know — why such definitions elude us.

The standard, 'polar' conception of knowledge and ignorance can mislead us: it is easy to analyze them as *logically* distinct, opposed concepts; however *phenomenologically* (that is: in our **experience** of them), knowledge and ignorance co-occur; they mingle. For it requires knowledge, sometimes a great deal, to be aware of our ignorance. By the same token, not-knowing shapes and suffuses knowing, to degrees we can't determine. **Logically**, knowing/not-knowing is a contradiction. **Experientially**, knowing/not-knowing is a process: part of the symbiosis of awareness, which is itself more fluid, complex, and mysterious than the adults of my youth, or I, in my adulthood, supposed.

In his *Apology*, Socrates examined this epistemic mix. Recorded by Plato, the *Apology* comprises three brief, extemporaneous speeches Socrates delivered, at his capital trial. ("Apologia" means defense in Greek, not "I'm sorry.") He tells of a friend who travelled to the oracle at Delphi, to be told that Socrates was "the wisest of men." Socrates, who knew he was ignorant, protested, and determined to present to the oracle men wiser than he. Accordingly, he sought out those reputed for wisdom, and questioned them publicly about the nature, source and validity of their knowledge. (Socrates, the ignoramus, must have understood more of the "experts" expertise than they, so deft and pithy were his examinations.) One by one, the "authorities" revealed that they knew less than they had supposed: they remained not only ignorant of their ignorance but ignorant of their ignorance of their ignorance. The humiliation these respected men suffered as Socrates apprised them of what they wished not to know — their ignorance — fueled a retributive fury which culminated in his indictment. After many years, Socrates accepted the oracle's statement, broadly interpreted: any man is wise, who, like Socrates, realizes that he is ignorant.

Also in the *Apology*, he declared: "The unexamined life is not worth living." Examination, self-examination, and ignorance are related, according to Socrates. Awareness of ignorance occasions inquiry, and fuels it; realization of our ignorance simultaneously opens and goads us to attend to our experiences. And we need goading! As organisms, we tend toward parsimony in such matters — as if our energies deliberated: *why should we look? why should we look* ***there*** *if we already know what there's about?* Through the *Apology*, Socrates entreats us to overcome inertia: to plunge into the labor and delight of learning, which some call knowledge acquisition, but which depends, nonetheless, on not-knowing it all.

In fact, we don't know it all.

Nor will we.

Nor can we.

Underestimating Our Ignorance

Psychological research indicates that humans are biased organisms. That is, we tend — systematically and unawares — to distort experience, in accord with mechanisms which were probably, initially, adaptive. One bias, which pertains to ignorance, is our positive orientation toward the positive. Tests reveal that we tend to notice 'positives' (i.e., things before the visual field, things nameable, objects, events) more readily than 'negatives' (i.e., absences, voids, non-occurrences). Moreover, positives count more than negatives in our recollections, evaluations, and predictions. We learn more quickly in the presence of 'positive' information (an occurrence, for example: the dog barking in the night) than when faced with equally or more compelling negatives (a non-occurrence — such as the one Holmes detected in *Silver Blaze*: the dog *not* barking in the night). This bias may have enabled us to survive when our prey/predator relations were more elemental. Prevenient still, it skews our experiencing, and our interpretations and evaluations of experiencing. **Rarely do we perceive this bias.** Nor many others (perceptual, conceptual, and interpretive) intrinsic to our fundamental operations.

How does this bear on ignorance?

Whatever we say, have said, or will say we know, and our bases for so saying, are residua of prodigious not-knowing, and suffused with it. When we refer to 'reality,' (and we do, albeit in language less pompous), we refer to things known, things unknown, and things unknowable. Yet we have no idea of the nature of the latter, gargantuan domains, nor their effect, unperceived, on that which we have, will, or do say we know. Further, organismic and cultural biases encourage us to overestimate the range and importance of our knowing, and underestimate its intrinsic limits and relations to not-knowing. For example, when we think of knowing, 'prodigious un-knowing' is far from mind as a rule. As to why the brilliant Socrates insisted on his ignorance, we may psychoanalyze... false modesty perhaps?... obsessive iconoclasm? Let us rethink.

While the 'known' or 'knowable' is likely a minute extract from an infinite 'unknown,' we exaggerate its extent and status with respect to the unknown. Since we see the 'known' as positive, and the 'unknown' as privative (the absence of that positive), we 'favor' knowing, without knowing it. If I were to draw a map of the 'known' and 'unknown' expressing the presumptions of my culture, the 'known' would appear large, detailed, and lavish. Labelled and separated, its territories would teem with positives: events, existents, things nameable, locatable, and tangible to some sense or operation. They would glow with the colors of ego. The 'unknown' on the other hand, would appear drab and marginal and — save for a few hot spots, like AIDS, cancer, etc., — confined to penumbral perimeters. In this case, cultural biases mask and exacerbate, rather than expose and mitigate, biologic predisposition.

The culture in which I was raised, and which Plato depicts, esteems both knowledge and the personal ego, and conflates them. To us, knowledge is a possession, an adornment. It is self-conscious self-aggrandizement, respectable display. This culture glories in its ego, calling attention to its proud achievements, through knowledge, in science, technology, and commerce. Not all cultures cultivate this self-image. Some advocate not-knowing and restraining, or retraining, personal ego. And their maps of 'reality' differ substantially from those of my adult teachers. I will not debate perspectives; each has utility and disutility. *But I need to remember this: as a child of my culture, I am overdetermined. To think about not-knowing, I need to think about my biases. I need to re-think.*

According to the oracle, Socrates was wise to see that he was ignorant: that he could not apprehend reality. He had perceived that his powers, and ours, are limited. While they permit the barest glimpse of a larger universe, they also distort it, to degrees we cannot gauge, in accord with physiology and culture. The sages of Socrates's time, and ours, talk as if they sensed, interpreted, and understood reality. Athenians ill appreciated Socrates's attempts to stimulate their self-understanding so that they too might be wise: that they too might see their ignorance of their ignorance of their

ignorance! Similarly, we may feel dismayed and 'deflated' to discover that, not-knowing what we don't know, we don't know what we don't know about reality — nor, hence, what we do. Still, self-reflexive wisdom bids us acknowledge our fundamental ignorance of our fundamental ignorance. This insight accords with much we accept from a tradition we revere: empirical science.

Let us re-consider 'prodigious un-knowing' in this light. What we know, or claim to know, is the product of a series of abstractions (read: takings, selections) from what-is. We humans are not 'passive receptors' of emanations of reality. We alter, strain, construct and interpret even percepts. As a child, I wondered how adults could see and understand so straightforwardly and unequivocally what-was-going-on. They didn't... although many thought they did. Failing to note contradictions between their epistemic folkways (naive realism) and scientific studies of perception and cognition — endorsing both but pondering neither — many mistook the results of abstracting for unmediated inpourings of reality. They ignored or dismissed aspects of their experience which might have piqued suspicion: aspects which culture and language 'negativize,' hence, 'nullify.' If, as a child, I had understood adults' language and world view without adopting them, I might have cautioned my elders. I (and, I think, many children... who *have* to feel, sense, and puzzle about their-living —actively, fixedly, desperately and self-reflexively — just to function) might have said:

As human organisms, as residents of this planet, as members of this culture, as creatures of now, whose perspectives are honed by disposition and predisposition, and lightened by impulse, you select what you say you sense from an infinity of processes which denominate what-is-going-on at any moment. So impressed are you by what you appear to grasp that you forget that, simultaneously, you cannot, do not, or choose not to take in much more. Your understanding is always partial, incomplete, mediated and reconstructed; it is never of experience-as-it-is. I am aware that I do not understand 'reality.' Further, I do not understand myself: my powers, limits, role and place. Can you be less aware than I? Can

you understand less than I? This much I observed as a child... and recanted, having been seduced and charmed: hypnotized by words.

In the quotation which opens this essay, M. Jourard asserts that *"we begin life with the world presenting itself to us as it is."* His memory surpasses mine. I suspect that I have been and will remain ignorant (that is: unable to perceive the world-as-it-is) and ignorant of my ignorance (that is: unable to perceive what about the world I don't know and what I misunderstand because I don't know). For, however amplified by science, the range of my senses is quantitatively as well as qualitatively incommensurate with 'reality.' I perceive *less* than is there, how much less I do not know. Moreover, I cannot tell how what I miss relates to, explains or changes what I do perceive. Not only do my processing systems limit information, they alter it to make it processable. Percepts are not 'given' to me by experience, they are *constructed by me*... how and from what I also do not know. I rarely perceive without interpreting and evaluating; these also are selective, variable, biased and complex: constrained by perspective on many levels. I **am able** to sense, infer, interpret or understand a very limited slice of what-is going-on. What I **do in fact** apprehend is, at best, a minute fraction of that. Lensed organismically, culturally, and individually, my abstractions occupy 'nows.' The variables of 'now' affect my takings enormously and incalculably. Moreover, I actually ignore, suppress or distort much sensory information. At my age, I work to notice my nows!

Yes, I am an ignoramus... I confess to knowing/not-knowing but understanding little of it. I am no expert, no sage, no authority. And it shows. Still, I learn, I live, I enjoy as I permit myself. I wonder. I smile: it's never too late to grow young...

The chief object of education is not to learn things but to unlearn things.
G. K. Chesterton

Ann Kerwin was born in Seattle, Washington. She spent most of her childhood, and early adulthood in Southern California, where she attended one parochial grammar school, three high schools, two undergraduate institutions (graduating from Immaculate Heart College, B.A. English) and one graduate Institution (University of California, Riverside, M.A., Ph.D. Philosophy). Dr. Kerwin has taught at the University of Arizona for eleven years and currently teaches in the Medical School (Department of Surgery) and Humanities Program. She is a dedicated teacher who writes about ignorance, nothing, creativity, and related topics

The most beautiful thing we can experience is the mysterious. It is the source of all true art and science. He to whom the emotion is a stranger, who can no longer pause and stand wrapped in awe, is as good as dead; his eyes are closed.

Albert Einstein

We say 'seeing is believing,' but actually, as Santayana pointed out, we are all much better at believing than at seeing.

Robert Anton Wilson

In Japan we have the phrase Shoshin, which means 'beginner's mind.' The goal of practice is always to keep our beginner's mind. Our 'original mind' includes everything within itself. It is always rich and sufficient within itself. This does not mean a closed mind, but actually an empty mind and a ready mind. If your mind is empty, it is always ready for anything; it is open to everything. In the beginner's mind, there are many possibilities; in the expert's mind, there are few.

Shunryu Suzuki

REACHING ALL DISCIPLINES WITH CRITICAL THINKING

RACHEL M. LAUER

In 1984, New York City's Pace University committed itself to bringing critical thinking principles to a students of all disciplines. Since members of the curriculum committee couldn't agree on how to define critical thinking, much less how to go about involving faculty and students, they set up another committee under psychology professor Percy Black to decide what to do.

After meeting for several months, Professor Black's committee recommended setting up a center to serve the whole university. With the leadership of Provost Joseph P. Pastore, Jr., Joseph Houle, the Dean of Dyson's School of Arts and Sciences, and the endowment funds of Robert K. Straus, the Straus Thinking and Learning Center was born. We now try to serve three campuses, a thousand faculty, and 25,000 students.

Getting Courses into the Curriculum

As founding director, I had to plan how best to use the resources of a part-time assistant, a small budget, a collection of books, and myself. As there was not a single course on thinking in the curriculum, I couldn't reach students. Being a stranger among faculty, "bringing critical thinking across all disciplines" was hardly an easy challenge.

In academia we realize that departments must necessarily protect their course requirements and the number of students they can attract and hold. We know that entering any new course into the curriculum threatens to disperse the students' attention. Therefore, professors can be very cautious about approving competing courses. But with the vision and persistence of Professor Florence Denmark, chairperson of the Psychology Department, plus my own credentials as a psychologist, Pace now has in its graduate curriculum a four-course series designed to train instructors of critical thinking. And,

by the fall of 1990, New York City undergraduates will have their first critical thinking elective.

Enlightening Faculty

During the four years it has taken me to enter the official curriculum, I have been working directly with interdisciplinary groups of faculty. To gain their interest I simply hand out flyers in the faculty dining room inviting them to attend workshops with meat various times, including evenings and summer. Sometimes they come for free; sometimes my NEH funds provide them with 'expense compensation' per session.

Ripple effects as a result of working with faculty on our White Plains campus have been especially gratifying. Professors Vallone, Edelson, Anstendig, von Pein, and Weigold, who teach philosophy, English, reading, and history, studied with me for three semesters. Three of them have chapters in this book: "A Whole New Awareness," by Gerard Vallone, "Building Epistemes into a Freshman Writing Course," by Linda Anstendig, and "Using General Semantics to Enliven a Course in American Civilization," by Marilyn Weigold.

Professor Weigold, who is now finishing writing a history of Pace University, says her book's perspective has been influenced by her immersion in the general semantics oriented work we have done together. Others of my faculty 'students' say they are using critical thinking principles in their courses in business, computer education, nursing, chemistry, speech and communication, and educational administration.

Sponsoring Special Events

Our Center has also sponsored special events for the Pace community and the outside public. For example, we ran an all-day seminar on "Critical Thinking About Peace and War." We had

three stimulating sessions with students in the Honors program. This year we hired Dr. Judith Malamud, psychotherapist, to run workshops on "Self Awareness and Decision Making." These have proven especially popular, for they give people a rare opportunity to focus upon their inner life and its imagery. Her work supplements mine on the topics of intuitive and creative thinking. One weekend we organized a seminar for our Law School faculty who were working on their own group dynamics. We have also sponsored seminars on "How to Run Effective Meetings," and "How to Help Disruptive Juveniles Become More Cooperative."

All of these special events demonstrate that critical thinking principles are best illustrated and appreciated when presented in the context of topics of current interest to audiences. Trying to teach even such important general semantic formulations as non-identity or map-territory relations in the abstract has resulted in glazed-over eyes. But when formulations are imbedded in issues of personal or civic concern, people become very receptive. For example, learners easily grasp the concept of observer bias when they step back and analyze their own dialogues as recorded on video tape.

Roots of Knowledge

My major challenge in planning the center's program has been deciding what to teach when I work with faculty and students. The field of critical thinking is vast and open to multiple definitions. My own background has included social and developmental psychology, general semantics, and the epistemics of J.S. Bois. Over the years I have amalgamated this background into a program called *Roots of Knowledge.*

I have started with the assumption that clear thinking processes must empower people to play out concerns of the major domains of living. A college education as a whole should prepare people for better living throughout the years ahead. What are these *domains of living*?

Personal Life. Every human being is challenged in getting along with a spouse, friends, children, parents, or other close relations. Frequent questions are: How do we give and get love, care, support? How do we have fun together? How do we prevent and resolve the painful conflicts? How do we balance our needs for stability and fidelity with needs for novelty and autonomy? How can we achieve and enjoy aesthetic pleasures? How can we keep developing as human beings?

Work Life. Nearly everybody works at something. Tasks can range from sweeping floors to repairing computers, from orchestrating a birthday party to running a presidency. Frequent questions (beyond those of technical skills) are: How do I select a career and find a job? What do I have to do in advance? How do I connect my work with that of others? In what ways can work life be organized for personal and group productivity and satisfaction? How can I manage to do what I really want to do? Etc.

Community Life. Inescapably, we all live in one kind of group or another; e.g., a committee, a tenants' association, a neighborhood, a town, state, and nation. Our quality of life is interdependent with the welfare of all these other groups with whom we interact. Frequent questions are: How can we function effectively in our groups? What are good methods of defining and solving problems? How can we develop leadership skills? How can groups maintain membership and inspire productive work? How can groups overcome deep distrusts and destructive rivalries? Etc.

After considerable experience, thought, and reading, I've identified *four operations* regularly carried out in all of the above *three domains of life.* Whether we're dealing with people, problems, or situations, we must:

a. Observe what is going on (WIGO) inside and outside of our heads.

That is, we must perceive objects, facts, events, feelings, issues, and needs as they come and go in the patterns, sequences, trends of personal and group life, in the home, workplace, community, or media.

b. Evaluate meanings and interpretations of whatever is going on.

That is, we must be able to draw inferences and predictions, formulate opinions, recognize feelings, develop value priorities, identify causes and effects, make and test generalizations, induce and deduce, seek regularities and laws, formulate and test hypotheses, reflect upon results and re-evaluate, etc.

c. Decide what actions to take and avoid.

That is, we must be competent with decision-making processes, weighing alternatives, using such skills as negotiation, creativity, compromise, consensus building, etc.

d. Implement the actions decided upon.

That is, having decided upon goals, directions, or purposes, we must have a range of skills to accomplish our ends. These include the abilities to get through to others by body language, speech and writing, theater, art, and math, to connect with others in empathy and synchrony, to discover, create, marshall resources, etc.

Reaching Faculty: One at a Time

As many faculty do not have the time or motivation to study critical thinking as such, I have tried to devise means of reaching the mother than the usual seminars and workshops. To my delight and amazement I've found that in a half-hour, one-on-one interview, I

can evoke their insights into how they can highlight critical thinking principles as they proceed through their regular course material.

The interview technique I have devised requires focusing the professors' attention not upon the content of what they teach but upon such questions as, "What insights would you like your students to retain two years and more beyond graduation?" Most professors are aware of the research results indicating that students forget nearly 95% of course content within two years of graduation. So, I'm not surprised if a history professor has the wisdom to answer, "They should understand how different observers perceive the same event differently."

"Yes indeed," I say in my interview. "Students can surely realize from historical studies that people have their own filtering systems when they observe and describe any event. That's a principle they should always be aware of, whether they're considering a personal dispute, a congressional debate, or a job interview. What else can students learn from history that would be useful throughout life?"

A reply might be, "They should understand how events can be perceived in different time frames such as eras, sequences, cycles, and trends."

I respond, "Consciousness of time is important for all of us in dealing with growing children, ecological changes, personal relationships, etc."

Another reply might be, "History tells us much about how people exert and resist power over their lives."

"Yes," I comment. "It's important for students to understand power transactions. Life is permeated with the need to be aware of how power is distributed and balanced in the home, on the job, and in the community."

In other words, in a short interview, professors can 'tune into' some of the longer-range values of what they teach. These values turn out frequently to be the very principles of critical thinking we want them to highlight. The interview dialogue allows each professor to identify these important long-range principles and to perceive their usefulness throughout life. My responses underline and reinforce these principles.

After seeing my write-up of their interviews (see the samples below) the professors are often impressed with the importance of what they're doing. More than one has said, "I've gone back and revised my whole syllabus to reflect emphasis upon these principles."

Sample Interview with a Professor of Computer Literacy

The following is a summary of my interview with Professor Fred Bunt, who teaches "Computer Literacy 501." I reasoned that if a course on computers could teach students thinking principles of lasting value, probably any course could, if appropriately focused.

The main question that focused my interview was: *"What thinking variables does your course illustrate which students can take with them into their personal, work, and citizenship lives*?" In other words, how does your course contribute to a crucial goal of general education, which is to increase students' powers of critical thinking? Although these questions focused my abstracting process, I asked Professor Bunt such questions as:

1. What do you expect your students to get out of your course as people? Now and in the future?

2. How do you start your course?

3. *Why* do you do ---? What could they do with that information; e.g., Why do you teach them the history of how computers have developed?

Repeatedly, I asked him to specify or give examples. When he said he hoped students would learn how a computer helps in solving problems, I asked, "What *kinds* of problems?" When he said he wanted them to understand the effects of computers in society, I asked, "What kind of effects do you perceive on their personal, work, or citizenship lives?"

When he said he wanted students to develop systems of organizing data, I asked, "What do you mean by 'system'? How do you get across the concept of 'system'? How can that concept be applied in other aspects of their lives?"

Concepts Elicited

Change — By learning the history of computer development students can learn to observe how *any* phenomenon evolves over time. We call this 'perspective.'

Rates of Change — Phenomena of all kinds change at different rates at different points of time for different reasons.

Trend Analysis — Trend analysis requires us to observe and evaluate the on-going processes inside and outside of minds.

Acceptance of Uncertainty — Being able to analyze trends and make predictions are functions of too many variables for certainty. This principle applies for all aspects of life.

Context Awareness — Required to see how computer development is a function of the goings-on of larger systems of society. Context awareness is universally useful.

Interdependence — Computer development and use is both affected by, and affecting of, other aspects of society. Issues of crime, ethics, invasion of privacy, and health eventuate. True for all technology and other human systems, such as families, nations, organizations.

Defining a Problem — Generally computers can answer clear-cut questions, but what are the questions? What constitutes a problem? Can it be formulated in answerable language? All human committees must ask clear, potentially answerable questions.

Locating and Sorting Data — Where is the relevant data? How can it be most usefully categorized and ordered?

Hypothesis Formulating and Testing — Required to solve problems systematically. A basic methodology for solving any problems.

Suspending Judgment — A skill to prevent jumping to conclusions; waiting until the test results are in.

Analysis — Analyzing data requires more hypothesizing, speculating, perceiving relationships, categorizing, and re-categorizing.

Synthesis — Required to come to conclusions that are relevant to problem-definition.

Patterning — Problem-solving on computers and elsewhere requires ability to create or use algorithms, and to sequence steps in orderly fashion.

System — A concept required to grasp all sizes of mental structuring of data. Systems can be seen as stable or as 'in process;' as cell-sized or cosmic; basic to all conceptions of life functioning!

Imagining and Projecting — To overcome timidity or perhaps fright of a new tool, students must encounter their own imagery and projections. Such inner awareness could be useful in approaching any new experience.

The interview was short, but I had the impression a basic course in computer literacy could easily highlight the major thinking operations needed in life functions.

Dr. Bunt commented that he thought all faculty would profit from such an interview to help them focus their general objectives with students.

A Sample Interview with a Management Professor

A second interview even more clearly illustrates how critical thinking skills can be evoked and highlighted in regular courses. Dr. James Hall teaches, among other subjects, Management 263, whose main purpose he says is to help business students find a framework for developing employee educational programs. In other words, his students practice educational planning for their future employees.

In dialoging with him, I maintained the same assumptions: namely, that in every course lie principles of lasting value to people in their private, work and community lives. I also helped him look for examples of the practical and universally necessary thinking skills classified under the headings of observing, evaluating, planning and implementing.

Concepts Elicited

Framework — In considering different training models, students learn the idea of *structures* with which to organize their experiences. They become conscious of how they filter and order chaotic data, and of how different structures lead to different patterns of action. This *consciousness of abstracting* is useful for processing data in any life situation, whether at the family dinner table, an executive board meeting, or a U.N. debate.

Development — In putting together a framework for employee education, students practice thinking in terms of human *change, process, growth over time.* They grasp concepts of change from *simplicity to greater complexity*, from immaturity to greater maturity. Learning to think in terms of "where are we now and what are we

becoming" is an orientation useful in all aspects of life — friendships, committee work, analysis of a country's growth process, etc.

Values — In considering the *growth-producing potential* of any educational program, students practice identifying, valuing, and furthering human goals ranging from pleasure seeking to the desire to actualize as people. Students learn that people have value in and of themselves, that neither people nor jobs are just means to ends. Valuing human growth is important in considering others at home, at work, and in communities.

Program — Students learn that a program is a *sequence* of *ordered activities*, short and long-range. Programs are essentially blueprints, maps, or plans for a series of activities to be implemented indifferent time frames. Capacity to formulate a series of orderly steps in the context of purposes and values is necessary for everything from making a family budget, a system for disciplining children, a computerized lesson, or a plan to solve the problem of homelessness.

Objectives — In formulating objectives for an educational program, students practice *imagery* in imagining outcomes for their plans. They must ask, "What do I want myself or this group to accomplish?" Setting goals for accomplishment involves other mental activities such as thinking into the future, *comparing future projections with past experiences* and evaluating them. The parent who scolds a child does well to consider first his/her objectives. Activities carried out on the job can be honed to fit with clear intentions for later results.

Means and Ends — In formulating educational objectives, students learn to identify needs. They must *observe* their constituents, *evaluate* and *classify* what needs to be done, for whom, and in what ways. "What needs to be done?" points to the *ends.* "In what ways?" suggest the *means.* "For whom?" involves *people.* For every end there is a choice of means. The choice of means is engaged when students learn to value people implicitly, not just as a means

to a profit, but as people with their own *motivational systems.* Planning for *quality of life* in the here-and-now is important also in planning the here-and-now quality of life in the home or on the City Council. 'Ends,' or results, have impact on individuals in *feed-back* cycles.

Interactions and Transactions — In recognizing the *interactional nature* of their educational program with their anticipated learners, students gain the concepts of *ratios, trade-offs, dialectics.* They learn to ask such questions as, "How can I *balance* cost effectiveness with service delivery effectiveness?" Such questions apply in husband-wife relations, too, as in asking, "What will be the relative gains and losses in confronting my spouse on this issue?"

Empathy — In planning educational programs that *fit* learners' needs and abilities, students learn *to tune in* to realities as others perceive them. Such atunement requires acute *observing and evaluating, imagining* another's experience, *putting aside* one's own templates temporarily, *listening* carefully, *suspending judgment.* All of these empathic skills are necessary in every aspect of life. They help people become adaptable, tolerant, and understanding, and effective as well.

Context — In program planning, students must put together materials to suit the contexts of learners. Students learn to ask, "In what situations would this problem occur, this exercise work?" Situational (contextual) awareness is important in judging the relative value of any course of action. *Contextual flexibility* allows people to change customs, goals, procedures, as situations vary.

Describing and Defining — To plan for a group of learners, students must first observe and describe that audience. They must exercise skills of *classifying, comparing,* and *contrasting.* Students learn to ask, "What are these people like? How do they think? What are they ready for? What do they understand already?" Such habits of questioning are useful whether choosing a school for an offspring,

deciding how to explain a process to a group of workers, or writing a newspaper article.

Experimenting — In trying out a learning design with classmates, students learn basic scientific methods, such as *formulating an hypothesis, suspending judgment, collecting data, organizing and analyzing data, evaluating data* in relation to objectives, and *revising hypotheses*, etc. Such methodical skills are of course useful in any kind of problem-solving over the years. These are among what Piaget calls 'formal operations,' thinking skills that characterize mature thinkers.

Participating-Observing — In demonstrating to classmates how their projects were created and carried out, students are themselves under observation. They learn to ask, "What am I doing? What were my assumptions? How effective am I being? How could I improve?"etc. Students gain self-awareness, consciousness of their own filtering systems, awareness of their impact on others, etc. They practice making use of *feedback* — a requirement for continued growth throughout life.

Delivering Ideas — In demonstrating their designs to classmates, students get a chance to evaluate the effectiveness of various *forms of communication*, such as the use of role plays, video tapes, charts, graphics. They practice making presentations to different types of groups. Again, they're learning essential skills of how educators, learners, and materials relate. All through life we seek better ways to get our points across, to be helpful or influential at home, on job interviews, or in community planning.

Adapting — In listening to feedback of classmates and instructor, students learn to *transcend their egos* somewhat so as to adopt different approaches, to try something else as necessary. They learn to adapt to the maturity levels of their learners and to construct relevant content. How very important when relating to people of different cultures or ages!

Dr. Hall concluded this brief interview by commenting that his type of approach, which engages students in learning by doing, taking responsibility for choosing appropriate options, and by matching one's work with learners' needs, can help to move students along a personal development continuum such as is outlined by Loevenger or Perry.

The interviewing technique described above is actually better described as a dialogue that has the purpose of (a) research; i.e., helping us both discover in a regular course the variables relevant to critical thinking, and (b) training; i.e., helping the professors recognize and highlight these variables as they proceed with their curriculum.

Specific Thinking Skills

If we postulate the *three major domains of life* — personal, work, and community — and if we identify the *four necessary skills* of observing, evaluating, deciding, and implementing, what then might be a reasonable list of specific critical thinking skills that students need and could develop? The following are being thoroughly considered by Pace faculty:

1. Sensing — using physical tools of observation; e.g., eyes, ears, nose, tongue, skin, muscles, rhythmic resonance, spatial and temporal awareness. Using data from tools that extend macroscopic awareness; e.g., microscopes, telescopes, stethoscopes, X-rays, thermometers, electroencephalograms, etc. Noting body changes that denote emotions of fear, anger, love, and pain, or that indicate physical needs and well-being.

2. Intuiting — 'tuning in' to hunches, emotions, guesses, random images and thoughts. Allowing and noting the strange and unusual from the unconscious or non-rational sources.

3. Imagining and Fantasizing — allowing and encouraging the production and uses of day and night dreams, mental images, speculations, odd connections, free associations.

4. Symbolizing — noting, creating, and using objects and ideas in representations, metaphors, analogies, rites and rituals, myths and narratives.

5. Wanting and Wishing — 'tuning in' to personal and group impulses, desires, values, motivations, needs, preferences, purposes, both positive and negative; asserting or denying as appropriate.

6. Trial-and-Error — experimenting, deliberate 'playing' with data, events, experiences, and relationships to see what happens, to formulate possibilities and to test boundaries.

7. Empathizing — 'tuning in,' resonating with, understanding the realities of others, *their* ways of structuring, ordering, and relating feelings, thoughts, events. Suspending self temporarily to 'try on' another's way of being.

8. Defending — recognizing, using or restraining as necessary the skills of inhibiting, rationalizing, denying, exaggerating, projecting, minimizing, compensating, displacing, deceiving, attacking, ingratiating, etc.

9. Detaching and Disidentifying — recognizing and using, as necessary, the skills of disassociating from people, events, ideas, ideologies, dogmas, and involvements. Gaining freedom, comfort, and solace from aloneness, and 'tuning into' unencumbered consciousness as in meditation and contemplation.

10. Emoting — recognizing and appropriately expressing various degrees of emotion (fear, anger, love, pain) towards

objects, people, events, ideas, distinguishing emotions from facts, opinions, inferences.

11. Perceiving Structure — organizing observations into patterns, systems, models, paradigms, through recognizing similarities and dissimilarities of elements; e.g., perceiving wholes such as cells, trees, and animals, and groupings such as families, committees, nations, races, or planets, or thought structures such as duality and relationalism, belief and value systems.

12. Perceiving Sequences — noting that events have order in time such as cycles, trends, processes, or all-at-onceness; e.g., noting what comes before, during, and after. Recognizing causes and effects, actions and consequences.

13. Perceptual Relating — recognizing and using patterns of relationships; e.g., above-below, near-far; dominance-submission, competition-cooperation, expanding-leveling-contracting. Recognizing such complex relational patterns as psychological games, scenarios, life scripts, and world views.

14. Describing with Language — using words to name, define, and describe any observation, to recognize the process reality of objects and events, to communicate our perceptions of what is going on (WIGO) (inner and outer events) so that others can approximate understanding. Recognizing that any given thing can have many names and that language can be only an approximate representation of what it refers to.

15. Classifying with Language — verbally categorizing objects, events, and ideas according to their similarities of structure, order, or relationships. Being aware of using different levels of abstraction; e.g., the differences between apples,

fruit, food, and organic matter, or between rules, axioms, and laws of nature.

16. Re-classifying with Language — noting that any one object, event, or idea can be categorized in multiple ways for different purposes; e.g., that a person can be classified according to his name, gender, race, profession, morality, etc., or that events can be discussed according to their context, their effects or purposes, etc. Eliminating 'either-or' (polarized) thinking.

17. Inferring — noting and using guesses, estimates, hypotheses, speculations, about something or someone described; deducing or predicting a future event from a category; e.g., Mary is a lawyer; therefore she's probably interested in law and will practice law. Or, the gas tank must be empty because the gauge reads zero. Or, the probabilities are that the crying baby is hungry. Distinguishing inferences from facts. Recognizing and using "if ---, then ---, " logic.

18. Opining — using language to express a personal or group judgment; i.e., the continua of liking-disliking, approving-disapproving, agreeing-disagreeing. Distinguishing opinions from facts and inferences.

19. Generalizing — recognizing and using regularities as appropriate, distinguishing among and using concepts of never, sometimes, often, usually, and always. Specifying bases for conclusions; i.e., avoiding over-generalizing based on idiosyncratic evidence. Inducing; i.e., using specific data to build up to hypotheses or theories.

20. Understanding Cause and Effect — that is, recognizing and using various ways of explaining what makes things happen, the 'why' questions. Recognizing and using various sources of power or change. Distinguishing among primitive and scientific causologies.

21. Recognizing Processes and Continua — noting that static nouns refer to objects and events that are changing at different rates of speed and that adjectives refer to more or less of something; e.g., a person is always changing, and her qualities such as prettiness or athleticism are better perceived in degrees or operationalized as on-going behaviors.

22. Time-binding — recognizing that, because humans can create and communicate across time, we can build on the creative efforts of countless generations that came before us. We can draw on the words of Aristotle, Jesus, Shakespeare or Martin Luther King, Jr. in structuring the present or planning the future. As beneficiaries of that bounty, we have an obligation to contribute our share to the time-binding process.

23. Reflecting upon Thinking — being aware of one's own and others' thought processes, recognizing how thought patterns inform and direct feelings and behaviors in self-reflexive ways.

24. Disidentifying from Thought Patterns — that is, noting that ideas, ideologies, belief systems, laws, world views, and fleeting thoughts are human-made and are in the process of being re-made, learned and re-learned with varying consequences.

25. Acknowledging the Role of Human Filtering Processes — recognizing one's own and others' inevitable biases in observing and evaluating. Recognizing that even the questions people raise are filtered through perceptual and judgmental processes.

26. Participating and Observing Simultaneously — being aware of sharing responsibility for one's own and others' on-going

behaviors; choosing behaviors with thought-through intentions.

Modifications Invited

The above list, though comprehensive, is not all-inclusive. These ideas can be rephrased and recombined in many ways. Other ideas can be added. Some ideas seem much more important than others; some may be less than clear. In other words, consider the list tentative, an early draft, open to variations.

Note that I have chosen principles of 'thinking about thinking' which should be most relevant to the needs and everyday uses of the general, educated population as they go about observing, evaluating, deciding, and implementing in personal, work, and community living.

There are, of course, many more types of mental processes which can be learned for more specific or technical purposes; e.g., mathematics, symbolic logic, development of algorithms, complex data analysis, etc.

Are These Ideas Teachable and Learnable?

When people's attention is directed to these ideas, they can find illustrations in everyday discourse, and in the media of books, TV, newspapers, movies, etc.

With appropriate direction, students can find enlightenment through virtually any course; computer, English, ancient history, biology, math, modern social sciences, etc.

The question is, what are some good ways to direct students' attention to ideas such as these so they can recognize, incorporate, and apply them to their own lives? Experience and research thus far have shown that a two-semester course (or at least *one* semester)

taught with interdisciplinary materials can help students identify the principles and establish the habit of applying them to their own thinking, speaking, and writing. Workshops for faculty can enable them to see how to use their own course materials for further enlightenment and reinforcement.

Once a list of thinking skills is developed and agreed upon by faculty, we can predict faculty will to some degree (a) reorient their own teaching and (b) restructure regular exams so as to reveal student understanding. They will 'get a feel' for student progress and its assessment methods. Students can learn to take responsibility for assessing their own progress, once they have the principles laid before them. Assessment should become a lifelong habit, because these ideas can continue to develop.

A senior-year final examination for students in general might be developed. A great deal could be learned just from the process of developing and standardizing it. Very probably, essay questions would have to be formulated and reliably scored. Other techniques might include ratings of discussions, analyses of video tapes, behavioral simulations, self-ratings, etc. — all part of an on-going, self-corrective process.

Rachel M. Lauer, Ph.D., Professor of Psychology, directs the Straus Thinking and Learning Center at Pace University, New York City. In addition to undergraduate teaching, she prepares faculty and other post-graduates to teach critical thinking in schools and colleges. Her specialties have been developmental and educational psychology, group dynamics, general semantics and epistemology.

Formerly, she was Chief Psychologist of the New York City School System and a consulting psychologist for mental hospitals, schools, and a prison.

Seeing learning as a function of meaning calls for quite a different approach. It is easy to deal with facts. These can be gathered and presented in hundreds of ways. But if learning is a matter of meaning, this is only the beginning of the process; learning has not really occurred until some change takes place in the child's own personal and unique perceptual field....

The classroom must become a place where the exciting experience of exploring and discovering meaning is the central activity. If the objective of instruction becomes that of perception building, students may become aware of, or sensitive to, the importance of meaning. In this way they are learning about learning... They learn how to learn.

Arthur W. Combs, et al
Perceiving, Behaving, Becoming

"A WHOLE NEW AWARENESS"

GERARD VALLONE

After taking a Critical and Creative Thinking course that I teach at the College of White Plains of Pace University, one of my students wrote the following letter to the editor of *The Prestonian*, the student newspaper of the college:

Dear Editor:

Philosophy 200s — Critical and Creative Thinking, may be the best kept secret at Pace White Plains, that is, until now. This class offers culturally enriching field trips, free healthy in-class snacks, and creative block-building lego style. What more would a college student want in a class?

First, let me back up and mention what they do tell you. PHI 200s is an exploration of the roles of sensing, imaging, emoting, thinking and languaging in our daily living. Its aims are to allow us to catch ourselves thinking so that we can become aware of all that is involved in doing it, do it on purpose, and improve how we do it in order to do whatever we are doing all at once, and in the best way that we can, HUH? In other words, this philosophy course will help you to be more aware of not only what is going on around you, but also inside of you. It will help you better understand why you look at things the way you do, and why other people tend to look at things differently. After this is understood, you can take steps to improve where you may be slack. Or as Geri Lyon Grande, present 200ser, put it "Traditionally, schools give us information and we are expected to just give it back. What's different about this course is that it teaches us to think, not only about why people do things, but also why we do things. And that's a skill you can take with you long after you leave the classroom."

Ok, now what they don't tell you: This class is different. This class is fun. There is no hum drum lecture given each day, instead there is a chance to participate in funky experiences. There is a chance to let loose and say what's on your mind. There is a chance to grow and question things that you once accepted. "It's like being blind and then being able to see. You're given a whole new awareness of everything. And there is a new energy to be a part of the world with the feeling that there is nothing that you cannot do" said former 200s student, Ingrid Paul.

This course is definitely for everyone, but only if you're open to it. As Carlos Berrios pointed out, "It is hard, because you have to use your brain, and reorganize some of the ways you think."

PHI 200s is brought to you by the Straus Thinking and Learning Center of the University as well as the Freshmen Studies Department. It is offered at the College of White Plains only. Take advantage of it. It will offer you ways of challenging yourself, of trying new things, and most importantly, of growing.

Sincerely,
Pueng Vongs

While I am, of course, pleased with what Pueng said, a significant part of what enabled me to enable students to attain "a whole new awareness" was a result of working with Dr. Phyllis Edelson, Chairman of the English Department, Dr. Rachel Lauer, Director of Pace's Straus Thinking and Learning Center, Dr. Alma McManus, Director of the Freshman Studies Program and other faculty and students of Pace University who helped me expand my own critical and creative thinking.

Expansion began in the summer of 1987 with a workshop on "writing across the curriculum" given by Dr. Edelson followed by a year-long course in Critical Thinking and Epistemics by Dr. Lauer. Both were offered by faculty for faculty in the hope that we could learn from one another by sharing our expertise and implementing what we were learning while we were learning it.

After Dr. Lauer's course, I began to think about what I could offer in Philosophy to incoming students that would not only provide them with an orientation to philosophy as an academic discipline, but also enable them to think philosophically which, for my purposes, would be similar to, though not identical with, what I have come to understand is involved in critical thinking. Since I had already incorporated many aspects from my work with Drs. Edelson and Lauer into my Introduction to Philosophy course, which is often taken by incoming students, I discussed what I could do with Dr. McManus. We thought of the possibility of instituting a three-course cluster within the Freshman Studies Program, since changed to Incoming Student Program. It would consist of a Critical and Creative Thinking Course, taught by me, a writing course and an elective course in one of the arts or sciences, taught by faculty who had also worked with Drs. Edelson and Lauer.

We decided upon this structure because of the lack of self-consciously developed, utilized and transferred thinking abilities that many, if not most, of our incoming students seem to exhibit, even after their first year at the University. We hoped that, by focusing on critical and creative thinking skills, as well as working with them

in other courses that explicitly use these skills and at least one necessary medium of University work — writing — we could facilitate our student's studies at the University and, perhaps for us more importantly, their abilities to become autonomous,considerate, mutually respecting and responsible adults.

The Critical and Creative Thinking Course

Since my part in the cluster would be to teach the Critical and Creative Thinking course, I asked myself what I could do to enable the students to become aware of, develop and transferringly utilize critical and creative thinking in their daily academic lives. To do this, I had to be aware of what I meant by critical and creative thinking. My understanding of thinking is that it involves the creation and manipulation of symbols 'inside one's head' which can be used to represent aspects outside one's or anyone's head, inside one's or anyone's head and between one's or anyone's head and what is outside! It is different from sensing, imaging, wanting, feeling, valuing and willing. It, or rather the processes and their results which I call 'critical and creative thinking,' can be done noncritically in an automatic way or critically in a self-reflexive, evaluative, self-modifying and contextual manner. It can be done *noncreatively*, when one deals with issues in the same way that one has dealt with them before or unawaredly in new and successful ways. Or it can be done *creatively*, when one critically uses thinking to deal with issues in a way that is different from the way in which one has dealt with them before.

With this understanding of critical and creative thinking as ideas 'originating' outside and inside of my head, I eventually formulated a syllabus that contained the following orientation and content:

> This approach to critical and creative thinking supposes that people are sensing, imaging, feeling, thinking and willing beings who structure, relate and order both who they are and what they encounter in various consistent ways, which are themselves interrelated in various typical modes which, in turn, influence people's awareness of: what is going on inside and outside

of themselves, how it is going on, why it is going on, and what, if anything, can be done with it which can enable people to observe, evaluate and act on themselves, on things, with one another, in and between groups.

The course will be divided into four sections:

1. Processes and aspects of communicating
   A. awareness
   B. the content of awareness
   C. group processes
   D. structure, relations and order
   E. distinctions
   F. filtering systems

2. Thinking
   A. levels of existence and awareness
   B. language
   C. linguistic abstractions
   D. categorization
   E. sensation, description and fact
   F. metaphor
   G. emotions
   H. inferring and inferences
   I. analogy
   J. universalization and generalization
   K. judgment
   L. induction and deduction
   M. valuing and evaluating
   N. theorizing

3. Issue handling
   A. perspectives
   B. preferences and perspectives
   C. reality, truth and perspectives
   D. viewpoints and perspectives
   E. problems and perspectives
   F. viewpoints, perspectives, problems and group interactions

4. Speculating
   A. reality as process
   B. possibility, probability and certainty
   C. awareness

Experiential Approach

The course is presented in a distinctively experiential manner, similar to what some of us may remember as "Watch Mr. Wizard" on T.V., i.e. experience, discover and apply. Each topic is introduced in 'thesis' form, followed by some kind of activity which, in turn, is followed by a discussion of what happened in relation to the 'thesis.' What is discovered is then extended to some other area of the student's life.

'Theses' have ranged from "What you see is what you make, and what you make is what you get," to "Nothing is not structured, related and ordered," to "What and who we are, do and are aware of are a function of the structuring, relating and ordering of our sensing, imaging, feeling, thinking and willing in transactional relationships with ourselves and the world. In turn, we can say the world is also structured, related and ordered so that our acting, awareness and being may occur in various typical ways that may be said to be developmental and sequential."

Activities have ranged from having students place one of their closed hands over one of their open eyes and slowly separate two fingers to become aware of 'differences;' to watching Alka-seltzer being put into a glass of water and dissolve to become aware of the process nature of structured, related and ordered 'reality'; to a field trip to New York City to answer a class-developed question which amounts to "tell me on two sides of one page all you learned during this course."

Discussions have ranged from comparisons of the activities and discussions of classes in this course to classes and readings in other courses; to events in the students' own lives; to local, national, world and galactic happenings.

Discussion topics are enhanced by homework which may involve [1.] readings from the class text, *The Art of Awareness* by Samuel Bois; [2.] hand-outs from other sources, such as a chapter from Ralph Strauch's *The Reality Illusion* on "Language as a Perceptual

Process" or [3.] David Downie's Letter From Milan "Relearning the Fine Points of Seduction From Dr. Strangelove: Guiseppe Cirillo, the Prince of Seduction" in the December/January 1990 issue of *European Travel and Life.*

Activities may also involve hands-on field work, such as: using the insights you have gained from our work with filtering systems, perspectives and view-points, arrange a number of different kinds of objects in one place and ask at least three different people (i.e. in age, sex, educational or social status, etc.) what their experience was of what happened. From their responses, see if you can infer what their perspective 'might be' and tell why you think it might be that. If you can't make a judgment, tell why you can't and what you would need to enable you to do so.

To help students internalize what is going on during the course, many of the activities and discussions are carried on in small groups and reported back to the whole class. The students are also required to keep a journal, do a term project and a final event paper. The journal has three sections for each class: a *pre-class section* for any assigned homework, a *class section* for any notes they take and a *post-class section*, to me the most important, for their critical reflections upon what happened during the class. I collect the journals periodically and comment on them.

The term project consists of thinking critically and creatively about something that is given (e.g., research a topic) or made (e.g., make something, an 'art' work). What is chosen, whether given or made, must be something the student is interested in and is clearly related by him or her to the 'content' of the course.

The final event paper consists of a question the class makes up before a field trip we take to New York City and answered either one or two days after we return.

The following is a typical question. In at most two sides of one page, choose 'something' from the field trip to use as a basis for answering:

1. What conditions are necessary to facilitate the simultaneous participation, observation and evaluation of something within a particular 'spacio-temporal' context? Why are they necessary?

2. How are these conditions related to the structure, relation and order of the environment, yourself and the relations between yourself and the environment?

3. Did your awareness of the conditions and relations affect your experience? If it did, how and why did it affect your experience? If it did not, why did it not affect your experience?

A Field Trip

The following is not a typical trip but happened because we had some 'extra' money in the budget, which enabled us to hire a bus instead of using public transportation, and we were able to choose a day after exams were over so that time was not a problem. I wanted the students to experience in a relatively short period of time and a small area of space a variety of richly diverse geographical, cultural, social, economic and aesthetic aspects that would ordinarily not be part of their lives. I hoped that at the end of the course they could utilize what they had learned in a way that would enable them to appreciate both the difficulties and joys involved in thinking critically and creatively.

Each of the things we did, except our meals and the theater, lasted about one half hour. We left White Plains at 8:30 a.m. and had breakfast at Sylvia's in Harlem where we spoke about our own backgrounds and listened to a middle-aged Irish Catholic priest who was born and raised in Harlem speak about life there. We went to the Cathedral Church of St. John the Divine where there was a rehearsal for a concert that evening. We went to the Metropolitan Museum of Art where we saw the Rockefeller, Islamic, Japanese and French Impressionistic collections. We visited a friend's house

on the Upper West side where an eighty-six year old concert pianist played Bach, Beethoven and Bartok while we had strawberries, cream, chocolate and ginger ale.

We went down Fifth Avenue during the rush hour where we saw the American flag at Tiffany's being taken in. We visited the South Street Seaport, went to eat at an Afghan Kabob restaurant, saw the Pan Asian Repertory Theater's production of Ping Chong's Noiresque (a version of Alice in Wonderland), went to Greenwich Village for cappuccino and pastries and returned to White Plains at midnight.

Needless to say, most of our trips are not this diverse. However, we always visit a museum and religious structure, eat together and go to the theater. We have during the years gone to the bathroom in the Waldorf Astoria, attended a wedding at St. Patrick's Cathedral, eaten lunch at Trump Tower and been escorted out of a diner in SoHo after it caught fire.

To further encourage students to practice what they have taught themselves, I suggest they read science fiction such as Robert Heinlein's *Stranger in a Strange Land* or Olaf Stapledon's *Star Maker*, or Colin Wilson's *The Mind Parasites*, as well as more academically oriented books such as Robert Campbell's *Fisherman's Guide: A Systems Approach to Creativity and Organization*, or Jeremy Hayward's *Shifting Worlds, Changing Minds: Where the Sciences and Buddhism Meet*, or Gareth Morgan's *Images of Organization.*

What Next?

Students and faculty who have taught students who have taken my Critical and Creative Thinking course consider the course, and what we have been able to implement of the three-course cluster, a 'success'. The 'success' has been conditioned by at least three factors which have enabled me to see what needs to be done in the

future. First, the three-course cluster program requires both the availability of faculty to teach the courses and the scheduling of incoming students so that they may be able to take them. So far, we have only been able to coordinate two courses: either my course and a writing or discipline course, or a writing and discipline course. By Fall of 1990 we hope to have enough prepared faculty and available students to initiate the three-course cluster as part of our incoming student program. Secondly, the relative newness of this approach to both pedagogical method and academic content has not provided me with a range of available texts to expand and supplement class work. A grant from the Straus Thinking and Learning Center has enabled me to begin to collect short and precise pieces of writing which, I hope, will eventually find their way legally into some kind of text or manual format. Finally, the changing complexity of our student body, from traditional white middle class, eighteen to twenty-one year olds to a non-traditional multicultural population, and my own critical and creative thinking about my course's process and content have enabled me to see the need for the creation of modally new texts and teaching/learning practices. For example, I am considering using computer-based hyper-texts that may enable people with diverse kinds and levels of thinking to become aware of their thinking methods and those of others not like themselves, and be able to create ways, not only of living together without killing one another, but of helping one another to flourish.

In *Manhood of Humanity*, Alfred Korzybski says:

> The conclusion of the World War (I) is the closing period of the childhood of humanity. This childhood, as any childhood, can be characterized as devoid of any real understanding of values... (It) has been unduly long, but happily we are near the end of it, for humanity, shaken by this war, is coming to its senses and must soon enter manhood, a period of great achievements and rewards in the new and real sense of values dawning upon us. (p. 27)

While I don't think we have entered into manhood yet, I do think we are at least in what we may call adolescence, which may be worse than childhood. Through the kind of work done by people 'practicing' general semantics and epistemics, some of us may have entered, others of us may possibly enter, and some of us may help others to enter the personhood of humanity, where not only may the lion lay down with the lamb, but together they may produce a whole new awareness, with new energy to create and recreate an always new world.

I wish to thank the White Plains Chapter of the Kenan Trust, Scholarly Research Committee for funds which enabled me to write this article. G.V.

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In a series of taped interviews with old grads and undergrads, Harvard backed up its sales talk with a broadly brushed portrait of what a college education should be: a progression from cocksure ignorance to — at least — thoughtful uncertainty.

Time, 7 April 1985, p.77.

USING EPSITEMES TO ENLIVEN A COURSE IN AMERICAN CIVILIZATION

MARILYN WEIGOLD

Although the liberal arts are alive and well at Pace University, an institution founded in 1906 as a School of Accounting, business (with a capital B) continues to attract the overwhelming majority of students. Whether they choose the CPA program, General Accounting, Management, Marketing, Finance, International Business, or Real Estate, undergraduates enrolled in the University's Lubin School of Business are career-oriented men and women who are seeking relevance in all of their courses. Since many of these undergraduates choose the American Civilization survey courses to fulfill the core curriculum requirement in history, a concerted effort has been made, in the past few years, to emphasize the economic history of the United States, particularly in the second half of the six-credit survey, which covers the period from 1877 to the present.

One of the major topics examined in this course is the industrialization of the United States. Besides interweaving the social and economic history of the Gilded Age, the instructor uses the segment of industrialization to discuss various styles of leadership. Through the study of great industrial leaders and their ways of achieving success, students can also be introduced to *epistemes* and the *"Epistemological Profile"*. The epistemological profile is described in detail in the works of the psychologist-philosopher-semanticist J. S. Bois (2,3). His work is an outgrowth of the monumental thinking of Korzybski (5), Foucault (4), and Bachelard (1).

Derived from epistemology, the study of knowing how we know, *epistemes* can be described as themes or patterns of knowing which characterize whole cultures in given eras and which greatly influence the perceptual-social-emotional-intellectual behavior of individuals within that cultural era. The profile could be defined as a scale of five epistemes that characterize the thought patterns of western civilization over five epochs of history and that also appear today in

individuals and in the culture as a whole. Rachel Lauer has developed it into a valuable heuristic tool.

People living within an episteme are rarely conscious that virtually all their thoughts and decisions are filtered through the assumptions inherent within the current episteme. Gaining consciousness of cultural epistemes enables people to transcend them, to free themselves from the enslavement of unquestioned assumptions about how the world works, to free themselves to think and create far beyond the usual prescriptions and proscriptions of everyday 'reality.'

Students of history, when enlightened about the cultural epistemes that characterize different periods of time, gain an enormous advantage over ordinary populations. Not only can they 'see' the filtering systems which once manifested themselves in important historical events, they can also perceive better what's going on in the present, and even identify trends and cycles into the future. Furthermore, with consciousness of the assumptions about 'reality' incorporated into the epistemic patterns, they can compare their personal assumptions with other possibilities, thus giving themselves opportunities to choose new ways of living for their personal lives.

As a way of introducing the epistemes:

1. Class members view a videotape depicting businessmen of the Gilded Age, the so-called 'Robber Barons.' The tape explores the leadership styles of these late-nineteenth-century captains of industry. At the conclusion of the tape, photocopies of nineteenth-century and contemporary cartoons depicting business and political figures behaving in a autocratic manner are distributed, whereupon the instructor asks the students if the people portrayed in the cartoons remind them of anyone, including themselves.

2. Next, the instructor asks the students to list the names of 10 historical and contemporary figures whom they regard as good leaders.

3. The names of the leaders are placed on the board and the class is encouraged to discuss the leadership qualities of these individuals.

At this juncture, the instructor distributes the following material prepared by Rachel Lauer describing the patterns of thought constituting each episteme (6):

Psychosocial gestalts are the human manifestations of epistemes. They are the dynamic patterns of attitudes, habits, internalized values, modes of perceiving and thinking, by which each person relates himself to the world of things and people, observes and judges them. Briefly, and superficially:

Episteme I - The Egocentrics (or Projectors)

These people unconsciously identify their own perceptions with fact. Whatever they perceive, think, or feel is the way things really are. The stronger they feel, the more sure they are of what is so. They automatically project their own attitudes, purposes, and desires onto their interpretations of the rest of the world. They may be superstitious and even autistic in the sense of believing in their own and other's mysterious powers.

Episteme II - The Classifiers

These people counteract the chaos of the previous state through tightly structured ways of explicating reality. They believe that 'truth' can be known if one studies the basic characteristics of a thing. By giving names to things, elements, or processes, and by then taking the names as representing reifications, classifiers turn the whole world into parts with clear-cut distinctions. Their thinking is characterized by an Aristotelian logic — a thing is either A or B, and cannot be both. Memory, control and formalities are of utmost importance. They seek the one 'right' cause of phenomena. They emphasize finding the 'right' behavior toward the opposite sex, toward authority, and toward subordinates. They know how to behave in work, play, and love; they have strong, absolute convictions. Their emphasis is upon dogma, tradition, ritual, morality, and exact accounting.

Episteme III - The Relators

Deriving their truths from objective science, relators emphasize problem-solving through systematic observation, formulation, experimentation, etc. In contrast to the rigidity of persons at Stage II, they perceive the relativity and dynamics of a process world. To them, people are seen as both subjects and objects of social engineering, research, education, welfare, treatment, etc. They believe in multiple causation, and encourage innovation through technology. They believe that the methods and findings of science can and should be applied to the problems of human relations. Personal values and morals are highly relative, and therefore not to be judged dogmatically. They have great confidence that research will eventually produce all necessary knowledge.

Episteme IV - The Postulators

Deriving their 'truths' from 'subjective' science, heralded by the research of Heisenberg, postulators recognize their own contributions to creating different realities. Aware of their own limitations and idiosyncracies as observers and communicators, they emphasize open-endedness, receptivity, and non-certainty. Having eliminated the concept of causation and replaced it by concepts of transformation, they believe that truth can never be discovered or created in any final sense. Accordingly, they take responsibility for choosing their truths and realities. Self-actualizing human relations are characterized by interdependence, and sharing of feelings, values, and purposes.

Episteme V - The Unifiers

The unifiers have ceased separating the observed from the observer, and the concept of causation has disappeared altogether. They believe 'knowledge' is gained through processes of consciously suspending verbal thought, engaging in empathic participation, peak experiences, and oneness with things and people. They emphasize the arts, contemplation, mysticism, transcendental thinking, and feeling; they seek the enlightenment of total populations.

Using these epistemic guidelines, students choose such great industrial leaders as John D. Rockefeller, Lee Iacocca, and Steve Jobs, then try to identify their assumptions about such large issues as:

1. What do they believe are the sources of power that keep things going?

2. What do they think are the driving motivations for people?

3. How do they think problems and issues should best be approached?

4. How do they judge what's 'really true'?

5. By what criteria do they judge what's morally good or right?

Students discover that whereas no man exactly fits any classification, each man does carry around an implicit pattern of answers to the above questions. His answers do affect his decision-making style.

For example, students are asked to look at Dr. Lauer's description of power sources illustrating the epistemological profile.

<u>What are the Sources of Power</u>?

Episteme I Power lies in supreme confidence in one's own intuitions, perceptions, feelings, judgments, and decisions. Personal power is enhanced by aligning with external and arbitrary forces of chance, magic, prophecy, rites and rituals, charismatic leaders, etc.

Episteme II Power lies in knowing that things truly *are* and *are not*; in identifying their inherent nature, form and structure, in assigning proper classifications from which to draw logical deductions; in abiding by the time-honored truths of tradition and authority, knowing what is right and wrong, and behaving accordingly.

Episteme III Power lies in understanding that truth is relative — dependent upon time, place, and circumstance; that predictive power can be gained by scientific research — observing, inducing, deducing; that personal power can be enhanced by skills of action and reaction — handling, persuading, making, combining, requiring, etc.

Episteme IV Power lies in understanding that 'realities' can be known only through the unique filters of human and technical tools of observation. Power is enhanced by knowing one's own and others' ways of patterning thoughts and their manifestations; in mastering skills of self-knowledge, of sharing, and of interdependent decision-making.

Episteme V - Power lies in understanding that all of life is a unified whole; that humankind is part of nature which is part of the cosmic streams and rhythms. Survival and growth accrue from suspending personal ego-boundaries, by noticing and resonating with on-going harmonies, by accepting insights from the well-springs of 'higher consciousness' or 'spiritual' sources.

Students are then asked, "Now that you've read about the lives of the so-called Robber Barons, what can you infer about their assumptions about how power operates in the world?"

The next segment consists of a silent, pen and paper, self-evaluation. Students are asked to determine their own epistemological profile. The instructor poses the following key questions:

a. With which episteme are your own assumptions most consistent right now?

b. Where are your doubts about your own beliefs?

c. In what ways can you conceive of thinking differently a year or a decade from now?

In asking students to perceive fundamental thought differences among great public figures, asking them to identify their own assumptions, and then asking them to imagine change in themselves, the instructor can then pursue other basic dictums such as:

a. The process nature of reality; i.e., how everything is in a state of flux, but that there are different rates of change.

b. The necessity of realizing that people, situations, knowledge, etc. are not static and that we must be open to new possibilities and restructuring.

c. The need to observe events in sequences, and to realize that there are multiple points of intervention in problem-solving.

At the conclusion of this segment of the course, the students are prepared to apply what they have learned about change and the epistemes to subsequent topics, ranging from U.S. foreign policy from the Spanish-American War through World War I to the origins and manifestations of the Great Depression. Equally important, many of the students begin to incorporate these principles of critical thinking into their own lives.

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If we admit that knowledge undergoes an evolution in the course of ages, we must admit that the human mind has a parallel evolution. History may repeat itself in activities that involve primitive reactions of love, hate, prejudice and drive for power, but there are modes of thinking that do not regress; there are thoughts that are definitely rectified, enriched and completed. They do not go back to their original limitations. The scientific method is essentially a correction of previous knowledge, a broadening of our mental frames of reference.

Gaston Bachelard

BUILDING CRITICAL THINKING INTO A FRESHMAN WRITING COURSE

LINDA ANSTENDIG

Thinking about critical thinking and general semantics, first in Dr. Rachel Lauer's faculty development workshop at Pace University, and then in my classroom applications, has led me to make significant changes in my teaching. Content and methodology have begun to mesh more closely as I have redesigned my Freshman Developmental Writing course, trying to provide my students with conceptual tools and the ability to better analyze the materials of any discipline (5, p. 9).

Too often underprepared college students, who are required to take a remedial writing class, suffer through a basic skills and drills approach that relies on workbook exercises and formulaic prose. My research in the teaching of writing and my involvement with critical thinking have enabled me to use a different curriculum model that helps beginning writers become actively engaged in their own learning as they interact, inquire and monitor their own thought processes. I try to develop a collaborative community of readers and writers who learn to understand more clearly the nature of their language — its uses and misuses.

The principles of general semantics as put forth by Korzybski, Hayakawa, Potter and others have provided me and my students with a lens through which we can explore thinking and communication skills. Students become aware of assumptions hidden in the structure and ambiguity of language. They begin to appreciate "the dynamic, changing... non-linear, process-character of the universe."(7, p. 213) Interestingly, the general semantics view dovetails well with the developmental stage theory models of Benjamin Bloom, Jean Piaget and William Perry, all of whom have influenced the field of critical thinking and my own work with beginning college writers.

The developmentalists believe that individuals move through a sequence from concrete to abstract levels of thought and that we as

instructors can foster the learning students need to move from one level to the next. Although a few studies have shown that less than fifty percent of college freshman are operating at the formal level of operations outlined by Piaget, research has shown that appropriate educational experiences can enable students to think on more abstract levels (3, p. 32). William Perry, in his experiments at Harvard, described how college students can move from a dualistic view of knowledge towards a more relativistic stage, involving the recognition that despite uncertainty one must make decisions and act according to one's values. Both cognitively and affectively, students need to become less egocentric and more able to embrace multiple perspectives.

Hayakawa in *Language in Thought and Action* has developed a text to help individuals move from an 'intensional orientation' where they perceive, act and use language according to their limited maps towards an 'extensional orientation' where they become more conscious of their own abstracting processes. Then they are able to understand the uncertain, changing nature of the territory beyond them and use language more accurately in interpreting and expressing their view of 'reality' (4, p. 58). Informed by Hayakawa's ideas and the developmentalists' theories, I have incorporated many language activities throughout the semester, encouraging my students to become more sensitive word users, more powerful observers and more conscious abstractors.

I have carefully structured my writing course around different themes, such as "growth and change in adolescence," (adapted from the work of David Bartholomae (1) and, last semester, "language and identity," as a way of helping my students move to higher order abstractions (and from intensional toward extensional orientations). They proceed from dealing with significant aspects of their own lives to dealing with patterns of experiences to building their own theories. Weekly readings serve as springboards to writing assignments, in which students generalize from their own experiences, from their readings and from sharing with a community

of peers. From day one, I stress composing, thinking and exploring together and experientially learning from each other.

I try to make sure that each days' activities builds on past and leads to future work, and that all assignments are, in a sense, recursive and ongoing.

We begin the semester with an Interview-Icebreaker exercise (see page 214). It helps to start with a subject about which we all can be experts — our own names. At the same time, I can challenge my students to look at something very familiar in a new way. Each person usually has an interesting history or perspective that perhaps has never been questioned or discussed outside of family circles.

We take some time to appreciate names as the building blocks of our language. We also set the foundations for the themes of our study, and introduce terms that we will be using throughout the semester: maps, territory, connotation, classification, etc. We also pose questions that we will continue to explore: How closely are our names tied up with our identity? What are our associations, biases about certain names? What are the different ways we can classify names?

We discuss why and how a name is not the thing itself, but rather a symbol, something that stands for something else. Later in the semester, we circle back to this discussion and delve into more complex issues when we read and write about stereotyping and the paradox of labels that conceal as much as they reveal. We can see categories as necessary but arbitrary ways of organizing experiences and data. This first exercise allows us to touch on many of the important concepts of the course, as well as to model the questioning process and collaborative learning we will be stressing throughout.

In the following weeks other activities might involve looking closely at organic objects and photographs (see Observation Activity page 215) so that students continue to practice being namers, observers

Interview — Ice Breaker

Focus: Using Language Constructively

Purposes:

Learning to use one's own and others' knowledge and experience; gaining insights into naming; sharpening listening skills; enlarging perspectives (cultural etc.)

Instructions:

1. Take a few minutes to write notes about your name, using the questions below as a guide. What is most important for you about your name?

2. Pair up, introduce yourself to your partner and interview each other about your names. Take notes on his/her answers to the questions below.

3. Introduce your partner to the class, telling what you learned about his/her name and its history.

4. Write a short summary about what you learned regarding names and their significance from your interview and from others that you heard.

Questions:

1. What is your **complete** name?
2. Do you have any other names? (family? religious?)
3. Do you have a nickname? Are there any stories behind your name? Tell one if you can.
4. Has your name ever been changed? (Has anyone in your family changed a last, first, or middle name?)
5. What language is your family name? Do you know what it means? Explain as much as you can.
6. Why was your name chosen?
7. How do you feel about your name? What is it like to have your name instead of another?
8. Have you wished to change your name? If you could change it, what would you change it to? Why?
9. Have you ever met or heard of someone with the same name? How would you feel and/or respond if you did?
10. Make up your own questions to ask. (Write them down.)

Observation Activity

Objectives:

To help students become better observers and perceivers.

To inductively develop themes for the course that we will keep coming back to during the semester — observing and perceiving, naming and defining, classifying, understanding the process nature of reality.

To introduce journal keeping.

Activity:

1. I will have each student choose one 'organic edible' from my mystery bag. The edibles will be exotic fruits and vegetables such as, jicama, celery root, sugar cane, ginger root, cactus pear, kiwi, bitter melon, papaya, etc. (Other organic objects might be included as well).

2. I will ask students to take a few minutes to write down the following: a short description, personal response/feelings about object, name if known (otherwise make one up), one question they would like answered (or one question addressed to the object).

3. I will divide up students in groups of 3-4 and ask students to take turns describing their object, asking for comments or questions from others in group. One student in each group will be responsible for summarizing the descriptions.

4. On the board I will jot down kinds of responses, trying to categorize them epistemically, if possible.

5. Next, I will ask one student in each group (or perhaps for whole class) to categorize these objects, and ask the rest of the students to try to guess what criteria was used. We will see how many different ways of categorizing these objects we can come up with.

6. Finally, we will end with a summary and short discussion of what we did in terms of describing, naming, classifying etc. I will assign the observation journal (see attached handout) and ask each student to live with their 'organic edible' for the week.

and inferrers. One week after the Observation Activity they write a short essay about their object. Simultaneously, they are reading and writing about various topics dealing with language and identity, and keeping 'dialectical,' or double-entry journals (adapted from the work of Ann Berthoff (2) (see page 217). Each time students read, they are required to write in their notebooks. On one side of the page they take notes, make observations, write down words, quotes, etc. On the other side they reflect on their specific observations by asking questions, making connections with their own experiences and other readings, agreeing or, at times, disagreeing with an author. The most important thrust is that they are self-reflexively dialoging with the texts and their own responses. These entries then serve as the basis for small and large group discussions. After sharing their responses, students can extend and revise them as they pool their knowledge and build on each others' interpretations in class.

As a result of modeling and practicing this process, students become better questioners. One student when asked to evaluate the usefulness of keeping a journal responded, "Questions stick in my mind because I ask them." Students also appreciate the sharing of ideas in small groups. One young woman commented, "We help each other expand our ideas." Critical thinking can thrive best, as Chet Myers has noted, in a classroom "where natural inquisitiveness comes to the fore," (5, p.10) and where students feel comfortable about thinking aloud.

Although I have highlighted a few of the learning activities of my writing course, it is important to view these within the context of the whole curriculum where reading, writing, speaking and listening are treated as integrated skills, where students are continuously dialoging and learning to extend their abilities to think self-reflexively and use language constructively. By facilitating a more interactive environment, I seek to empower students to structure, order and relate the data of their experiences.

My work at Pace University, especially in terms of faculty development opportunities afforded by Rachel Lauer's leadership,

Writing Assignment #2
(One week after Observation Activity)

1. Write a short essay about this object based on your journal entries. What was the most significant finding for you about this object, and/or your changing feelings toward it. Try to let your classmates, who will be reading this paper, know why this was significant.

   Or, describe your experience with this object during the last week. What made it special or different for you?

2. Describe a significant experience you have recently had with your own special possession. Try to observe the object as closely as possible, applying the techniques you learned from your week's observations. Explain why this object is so special for you, and not necessarily for anyone else.

DOUBLE-ENTRY READING JOURNAL

Notes on Notes; Reflections, Dialogue	Notes: Observations, Facts
— Questions you want to ask	— Author's main points
— Arguments you may have with author, his ideas etc.	— Details that explain, help you remember
— Ideas you wished author had discussed	— Quotes, a bit of dialogue
— Alternatives, second thoughts, new revelations	— Interesting language, examples of metaphor
— Connections with own Experience, other reading	— Author's conclusions, provocative words
— Evaluation: reasons you agree/disagree, like/dislike	

becomes more exciting and challenging each semester. Nothing can and should stay the same with a curriculum, with the questions teachers and students ask, or with the tenuous balance between the exploration of the composing process and the finished products and evaluations. I am looking toward teaching a team-taught Freshman Writing-Philosophy (Critical and Creative Thinking) course, and other colleagues are planning a team-taught Freshman Literature-History course where critical thinking and general semantics principles can be practiced in ever more effective ways for the benefit of both students and instructors.

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Words can arouse every emotion: awe, hate, terror, nostalgia, grief.... Words can demoralize a man into torpor, or they can spring him into delight; they can raise him to heights of spiritual and aesthetic experience. Words have frightening power.

Colin Cherry
On Human Communication

Any communication is a problem of translation. Translation... involves in its broadest sense not so much finding words to match other words, as finding experiences to match other experiences.

Anatol Rapoport

GENERAL SEMANTICS AND ROLE-PLAYING IN TEACHING CREATICAL THINKING*

THOMAS J. PACE

The late Elwood Murray some forty years ago wrote about the importance of the work of Alfred Korzybski in general semantics and J. L. Moreno in psycho-drama. Murray stated:

> Some persons who have studied both methodologies may say that it is a pity that these men did not work together. This writer does not agree. Their methods can be put together by other persons. It is doubtful whether either methodology would have been developed to its present completeness except under circumstances wherein each originator could apply his sole attention and energy over a great period of intense effort focused upon his single aim. In observing both of these men (they should be called geniuses) the writer will never forget the global view they bring to human affairs, the unlimited ingenuity they display, the profundity, the congeniality they exhibit, and the close absorption they have in their work (1).

It was the genius of Murray in his Laboratory in Interpersonal Communication to combine the methods of these two brilliant men.

This chapter discusses general semantics and role-playing in the teaching of critical and creative thinking. Theory and methods developed by Murray at the University of Denver and subsequently re-developed since 1965 in the Laboratory in Interpersonal Communication at Southern Illinois University in Carbondale are herein presented.

It was Murray who saw psychodramatics and general semantics as methodologies for human adjustment, evaluation and the

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establishment of more appropriate behavior. He merged role-playing techniques with general semantics evaluation as a viable methodology for change. Murray assessed the two methodologies in this way:

> A difficulty in achieving the ends of general semantics is in communicating the methods; in some cases it is very difficult, if not seemingly impossible to get the person aware of his abstractings and to recognize his mechanisms of misevaluation. Psychodrama frequently may 'get-under-the-skin' of such inaccessible persons insights and evaluations which would otherwise be impossible.

Both methodologies appear basic in the new teaching methods now coming into effect for communication. The advantage of general semantics is that a general scientific attitude may be brought into most all important human relations and affairs; the advantage of psychodrama is that

> blockages to the scientific attitude in specific situations may be removed, which it seems possible and feasible in no other way (2).

Moreno believed in the interrelatedness of the somatic, psychological and social (3). And to this Murray added Korzybski's neuro-linguistic formulations (4). It was Murray who pioneered the study of interpersonal relations through interpersonal communication (5). He believed the study of the other person or persons was more complicated than the study of non-personal 'reality'.

The Laboratory in Interpersonal Communication was created out of the belief that the interpersonal (self-other-world) is best studied in an environment of and with other individuals; that one must study the interpersonal interpersonally and that language and communication are non-verbal and verbal 'texts' for study. It is founded on the belief that problems of interpersonal relatedness can be understood and solved by a communal focus (the here-and-now

laboratory) on interpersonal communication. The Laboratory at Southern Illinois University convenes for college credit to integrate experiential and participatory encounters with modes of cognitive analysis. Central to the course is the verbal and non-verbal focus of general semantics in the sharing and processing of role-playing situations generated by members of the Laboratory.

Psychodrama and Role-playing

Psychodrama is the enactment of one person's deeply emotional conflict. Sociodrama explores the relationships between and among groups (nurse-patient, parent-child, teacher-student) thereby clarifying the role in the drama. Role-playing is somewhere between these two types in that the focus is more problem-centered and less emotionally involved. In many cases, the situations are fictive or invented by the group.

The value of studying interpersonal communication through role-playing may be gleaned from some of the themes and concepts which Moreno emphasized in his writings. Blatner (6) summarized these as:

1. Play as an element in culture and the helping relationship.

2. Catharsis — its place in history, drama, religion, and psychodrama.

3. The place of warm-up in everyday life — e.g., boxing, sexual activity, group process, psychotherapy.

4. Imagination — the creative potential; applications of fantasy.

5. Spontaneity and creativity as primary elements of human growth.

6. The importance of nonverbal communication, body tone and movement, posture, position, territoriality, lighting, sound,

music, colors, textures, body contact, laughter, and humor as elements in human relationships.

7. The social network, family network, community and societal network, and interpersonal transaction (therapeutic milieu), and so forth.

8. Here-and-now, — an essentially existential approach.

9. Focus on process rather than content.

10. Acting-out (in the service of the ego) as an expression of act-hunger, can be a synthetic rather than dissociative phenomenon.

11. The religious implications and applications of subjective, creative and spontaneous man in relation to a creative Cosmos.

12. Utilization of wide variety of methods, techniques, and technologies to help the client explore the dimensions of his experience (rather than restriction to one technique), i.e., eclecticism.

13. The applications of role-reversal to child-rearing, the teaching of empathy and interpersonal sensitivity.

14. The use of therapy *in situ*, (i.e., the intervention on-the-spot, exploring the problem in context and social network from which it arose), now applied in milieu therapy, residential treatment centers for children and adolescents, and other contexts.

Role-playing brings yet another dimension to general semantics' sensory awareness training*. Kinesics, proxemics, tonality of gestures, speech and postures provide clues for analysis. The

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* The summer seminar-workshops of the Institute of General Semantics include sensory awareness training.

enactment of interpersonal communication problems with concrete specificity trains one to be conscious of abstracting at the lower levels. Through the use of 'doubling' and 'role-reversal' one is able to experience the feelings as well as talk about them at higher levels of abstraction. Possible solutions and adaptations may then be tried out in non-threatening situations. Silent assumptions as defense mechanisms can be revealed which in turn may precipitate insight and change. Thus, role-playing is the experiential beginning of the natural order of evaluation.

Sharing and Processing

The role-playing session has several stages. 1) Students bring problems of interpersonal communication to one of several small groups within the Laboratory. The group and a selected director plan and rehearse the presentation. 2) The presentation is role-played before the other groups (audience). The director will set the scenes and can alter any planned sequence if need be. Members of the class-audience may become directors and re-constitute the problem or propose other outcomes to be enacted. Usually the person who proposes the problem is the protagonist or, at least, a resource consultant. A warming-up period with non-verbal participation exercises is conducted before each presentation. 3) The role-playing group shares and processes with the other groups (audience) the enactment immediately after the presentation. Each member of the role-playing group and especially the protagonist shares views about the presentation. Often the group is 'highly charged' after the presentation and the moment of relief brings forth a communal feeling. Each member of the audience shares what the role-playing situation meant to him or her or led him or her to realize. Quite often each person responds to the preceding statements made by another person (self-reflexiveness). The initial sharing is descriptive and supportive, focusing on similarities of experience. Critical remarks are delayed until the evaluative level (inferential) is called for, and they are ultimately processed at the higher levels of abstraction.

The application of general semantics to this project should be apparent. The structural differential is utilized in processing the role-playing situation, the presentation and the sharing session (See the chapter "From Electrons to Ideas" by Robert Potter). Kenneth Johnson, in his classic article on therapy and education, clarifies the process of abstracting and its self-reflexive aspect (7). Johnson relates the second-order and higher-order reactions to meta-linguistic questions such as, how do you feel about what is happening and how do you feel about your feelings about what is happening?

The interpersonal situation entails mapping the complex territories of what each person thinks-feels about the other and what the other thinks-feels about others' thinking-feeling, etc. All of these comprise relationships (territory) from which members of the group abstract with conscious self-reflexiveness.

Critical and creative thinking evolves from an understanding and utilization of abstracting from lower levels to higher levels with checking. It does not take place by dead-level abstracting. Often the focus can be misplaced on the causality (whyness) of the electro-chemical levels rather than on the non-verbal 'object' level where pre-reflection is constituted. Delaying one's reactions serves to bracket structures of identification and low quality semantic reactions, thereby encouraging one to formulate understandings and solutions (creativity) at various levels of abstraction and, perchance, to change behaviors as appropriate.

Building Community

The Laboratory in Interpersonal Communication fosters extensional orientations as opposed to intensional (egocentric) thinking (8). Consciousness of abstracting increases the quantity and quality of perspectives by participants and gives credence to perspectives other than one's own. Being open to other perspectives deepens and enhances one's own perspective. The sharing of a role-playing

experience (consciousness of abstracting) creates a feeling of community within the Laboratory class. The experience in the Laboratory further develops an understanding of community within other larger collective contexts.

Little research has been done on this facet of sharing and community. Hofrichter, using a phenomenological protocol, interviewed members of a group that shared with one another after psychodrama enactments. He explicated from the interviews' structures within the groups what he termed as *oneness within our individuality* and *existential giving.* He thought of this as *building community through verbal sharing* and termed the experience (at the higher levels of abstraction) as "liberating" (9).

From my experience in teaching the Laboratory in Interpersonal Communication for over twenty years, I have learned that this particular group approach allows each member to move toward the other, which fosters productive, critical and creative thinking as well as behavioral changes.

NOTES

(1) Elwood Murray, "Several Relationships of Psychodrama and General Semantics", *Sociometry, 9,* No. 2/3, 1946. p. 184.

(2) Ibid. p. 185.

(3) J. L. Moreno, *Who Shall Survive? Foundations of Sociometry, Group Psychotherapy, and Sociodrama.* Beacon, New York, 1953 (Revised). This is a classic text.

(4) Moreno and Korzybski knew of each other and met briefly. In his *Preludes to My Autobiography,* Beacon, New York, 1955, p. 55, Moreno tells of that encounter:

> While visiting Dr. White at St. Elizabeth's Hospital one day and expounding to him upon my ideas, he suggested that I meet Korzybski who was also there, attempting to cure mental patients by semantics. White remarked: "Count Korzybski is determined and resourceful in his way, just like yourself. I would like to put the two of you overnight together in one of our strong rooms, lock you up and then see what has happened to you the next morning." I was willing, but Korzybski did not appear. I did not get to know him until the meeting of the American Psychiatric Association in New York at the Waldorf-Astoria in 1934. Korzybski's *Science and Sanity* and my *Who Shall Survive?* had just appeared. Introducing himself to me he suggested that we exchange books but I said: "No, let's wait another twenty years." Unfortunately, he could not wait that long and so we have to exchange the books in the here-after. The analysis of language, useful as it is in itself, does not lead to any change in behavior. It has to be followed up by methods of action learning which train the pupil to think and act below and beyond the boundaries of language. It is interesting to note that before his death Korzybski became interested in group psychotherapy and action techniques and used role playing in his seminars.

(5) An excellent article on Murray's work is by Judith Brownell, "Elwood Murray's Interdisciplinary Analogue Laboratory", *Communication Education*, 28, January 1979. Pp. 9-21.

(6) Howard A. Blatner, *Acting In: Practical Applications of Psychodramatic Methods*, Springer, New York, 1973, pp. 142-143. This book is an excellent primer and explains techniques of psychodramatics that are not therapeutic in the psychological sense.

(7) Kenneth G. Johnson, "Self-Reflexiveness in Therapy and Education", *The Journal of Communication Inquiry*, 4, No. 2, 1979. pp. 95-108. Also in *General Semantics Bulletin*, No. 48, 1981. pp. 84-94.

(8) The Laboratory of Interpersonal Communication at Southern Illinois University-Carbondale has been the basis for several research projects. Two articles reporting on dissertation research are: Patrick J. Hebert, Tom Pace and William Holdridge, "Self-reflexiveness in Small Group Problem Solving, A General Semantics Extensionalization", *Journal of the Illinois Speech and Theatre Association*, No. 36, 1982. pp. 106-120; and David Lau and Thomas Pace, "Training Small Group Communication Students in Self Reflexive Evaluation", *ibid*. No. 37, 1985. pp. 35-45. These focused on self-reflexiveness and sociometric evaluations in small groups.

(9) David A. Hofrichter, "The Experience of Community in the Psychodramatic Technique of Sharing", *Group Psychotherapy and Psychodrama*, 26, No. 3/4, 1973. pp. 80-89.

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We dip an intellectual net into fluid experience and mistake a catch of abstractions for quivering life.

Max C. Otto
The Human Enterprise

A preacher, professor, journalist, or politician whose high-level abstractions can systematically and surely be referred to lower level abstractions is not only talking, he is saying something.

S. I. Hayakawa
Language in Thought and Action

YOU DON'T KNOW IT IF YOU DON'T SHOW IT

TOM CARTER

"Yes, I'm a language expert... I specialize in generalities."
Anonymous

Those of us incorporating the formulations of general semantics into our courses face a challenge: how to bring these ideas across to students in meaningful and *useful* ways. In the communication courses that I teach, applying ideas becomes paramount as I try to provide an atmosphere where people can start to think in new ways. "I intend to offer you tools for digging up the weeds in your evaluating processes," I tell them. "I hope you will put forth some effort and learn to use those tools."

An extensional orientation enables us to map the territories of life more accurately, to develop more realistic expectations. We can approach daily situations with less 'evaluative' ('perceptual', 'emotional', 'intellectual', etc.) blockage, thereby developing deeper awareness of what we infer to be happening. With my belief that better mapping helps me to navigate day-to-day happenings, I direct my energies toward improving my own (and hopefully others') mapping capabilities.

Alfred Korzybski consistently encouraged us to internalize the general semantics formulations and put them into action. Rote memorization and other 'traditional' approaches to 'education' (standardized testing, bell curves, etc.) involve little if any *application* of information to behavior. We need to create classroom activities that emphasize day-to-day application of the formulations. When we do, students begin to sense changes in their lives, sharpening their mapping skills (using the tools given them in class), and approaching learning with more enthusiasm and attention.

Clearly then, we must strive to provide meaningful and useful classroom experiences. I have found that by developing my own use of the extensional devices of general semantics, I've become more skilled at creating exercises that work. As I cultivate consciousness

of my own abstracting, I can more effectively assist others in discovering theirs.

My awareness of the formulations of general semantics began five years ago, when I enrolled in an introductory course. The principles, formulations and approaches I encountered there made implicit sense to me, enough so that I attended Institute of General Semantics seminar-workshops in subsequent summers. Currently, I teach communication courses — Small Group Dynamics, Theory and Research in Communication, Communication and Conflict, Intercultural Communication, and Public Speaking — at the college level. Recently I have consciously attempted to incorporate general semantics formulations into all of these areas.

I try to notice potentially instructive situations as they occur and practice consciousness of my own abstracting. For example, when I find myself waiting in the check-out line at the grocery store for what seems like an inordinate amount of time, I realize that my reactions (that might be labeled 'impatience,' 'irritability,' 'frustration,' etc.) have physiological repercussions. Knowing that my increased heart-rate and respiration, coupled with a system-wide adrenaline release may not constitute particularly beneficial reactions, I can then quickly tune in to some of my intensionally oriented evaluations. These include thoughts like "How can anybody be this slow," "Why don't these people wake up before they come to the store," etc. Most often, as I become aware of these evaluations, I can then examine their utility as maps. Confronted with such vagueness and generality, I can modify my reactions to fit more accurately with the territory of the check-out line. I realize that I know nothing about the persons(s) in line in front of me, the cashier, or the circumstances surrounding the 'delay.' I realize all of the options I had which could have kept me from putting myself into the situation in the first place. I have shifted my focus (and responsibility) from the world 'out there' to the world 'in here' (myself). We can practice consciousness of abstracting under almost any circumstances — traffic delays, waiting lines, mechanical

breakdowns, interpersonal conflicts, and so on. All of these can take on new significance and value, given the opportunity.

I have several methods for putting this generalized-awareness into practice; many can be entertaining as well as practical. I find network news broadcasts particularly useful for honing the tools of general semantics. How are the evening's stories selected? How thoroughly are they covered? How are they presented? And in what order? How accurate are my maps of 'world events' in relation to the realties of these events if my only sources of information are the network news broadcasts?

Ever in search of more useful maps, I turn then to my local TV news broadcast or major newspaper. Similar concerns emerge as I examine my mapping more clearly. Who owns the TV station or newspaper, and what interests do they have in news/advertising/ editorial content? (In Milwaukee, Wisconsin, where I live, one TV station and the two major daily newspapers are owned by the same company, as is common in cities across the country.) To what degree should I believe what I see/hear?

Television and print advertising also offer a smorgasbord of opportunities for using the extensional devices. Try eliminating the sound while retaining the visual images on TV commercials. I think you will find ample evidence of the advertiser's confidence that most viewers will fail to consider the message extensionally. Sometimes, even my efforts to examine the message closely aren't enough, given the frequency and rate of image cuts in most commercials. Without the distracting audio aspect of the message, more accurate mapping of the message becomes possible. This exercise has proven quite fruitful in my Theory and Research in Communication course when discussing how statistics can be manipulated by researchers, advertisers, politicians, and others.

In order to obtain a wider view (better map) of 'what happens' in the world, you may find that consulting alternate news sources can help tremendously. I find I can present students with perspectives/

information which they might not otherwise encounter, challenging them to examine the accuracy of their beliefs/maps. After considering several points of view, students begin to notice the extent to which many beliefs, maps and paradigms grow from informationally deficient roots. For instance, in my Intercultural Communication course, I asked student to read three articles; two of them (taken from the *National Geographic Magazine*) dealt with the consequences of the destruction of the Brazilian rainforest. One of these articles dealt with broad economic, political, ecological and international consequences. The other focused specifically on the gradual extinction of a small Indian group native to the rain forest. The third article, published in a nationally circulated music magazine, was a personal letter written by Chico Mendes (a Brazilian rubber-tapper and voice for the preservation of the rainforest) in response to a reporter's interview. (Mendes was assassinated in December 1988, only weeks after he wrote the letter.)

I also asked the students to visit the Milwaukee Public Museum's Rainforest Exhibit. By integrating the information gained from reading articles and experiencing the exhibit, many students realized how little they had really 'known' before undertaking the assignment. Many also related instances of how their interpretation of network and local news coverage had shifted. They found that they were far less willing to continue functioning with unchecked, false-to-fact maps and much more aware of the limitations of even their best maps.

In addition to this flood of potential class-material evident in the various media, I have found my colleagues remarkably rich in ideas and suggestions for exercises, experiments and assignments. As educators, they know first hand about the challenges and risks of trying something new, so their suggestions have often proven useful to me. One fringe benefit of working in an educational environment is the wealth of classroom activities that already exist, requiring at times only slight modification for appropriate application in a class I teach. One example is the 'meaningful exercise exercise,' created

by one of my colleagues to induce students in her class to commit themselves to a group project more strongly than they ever had before. She requested that they create a 'meaningful exercise' which she could use the following semester in the same course, but with a different group of students. I adapted the exercise for use in my Communication and Conflict course, as a means to allow students to become more aware of self-reflexiveness as they designed (in small groups) exercises that they themselves would introduce to the rest of the class during the final session. The results were quite positive, as students reported a 'surge of interest' in the assignment, knowing that they would present their ideas to their peers.

Casual conversations with friends, relatives, and others can provide classroom material to the attuned listener. One day I offered to share my 'all-natural' mint chocolate chip ice-cream with a friend. She asked what kind it was. I told her, "mint chocolate chip! Try some - it's great!" She responded. "But it *can't* be mint — it's not green!" Her statement, I realized, reflected an unchecked generalization, i.e., 'all mint is green, this is not green, therefore it must not be mint.' Harmless enough, indeed — yet reflective of a common practice for many of us; we think, react and respond in accordance with inaccurate impressions of the world, all the while believing that 'we are right'. This incident sparked my awareness of how often our attitudes, values, maps, etc. manifest themselves in daily interactions. I eventually asked students in my Communication and Conflict course to keep weekly logs focusing strictly on what they heard themselves or others say at home, at work, at school, on the bus, at the mall, etc., which in some ways reflected less-than-ideal mapping. At the end of the semester, several students commented on the degree to which they had begun to 'hear' things they hadn't noticed before. With supervisors, employees, spouses and friends, students noted improvements in the quality of interaction with these people. Checking perceptions (consciousness of abstracting) made real differences in real people's lives.

A related class exercise grew out of a near accident I was involved in a few months ago. While pedaling my bicycle on a major

thoroughfare, I approached an intersection where the driver of the car crossing my path paused as I approached, then accelerated through the intersection split seconds before I arrived. I then verbally abused the driver, who returned (and escalated) my comments, shouting something like "get a light!" Noticing the hour (dusk) and my lighting apparatus (none), I knew that my intensional *expectation* that drivers will yield to bicyclists was based on the assumption that the driver actually *sees* the bicyclist — a potentially fatal map. I later asked students to create their own file of incidents (generated by poor mapping) which 'might have turned out worse.' Again, students reported increases in awareness and reductions of those kinds of incidents.

Whenever situations involve humans, they also involve human evaluating. In my experience, extensionality as an approach to evaluating/abstracting has consistently improved the accuracy of that evaluating, bringing better-adjusted living. Inspirations for ways to relate these benefits to others can come from just about any activity — personal experiences, conversations, reading, observing, interpreting and so on. In fact, once you have made the decision and put forth consistent effort, effective approaches for presenting ideas begin to 'appear' almost exponentially. The single, most crucial factor involved in generating options may well be your determination to become more aware of events, processes, maps, abstractings, etc. Once the general semantics 'radar' is activated, it can operate with surprising consistency.

Since many of the formulations of general semantics relate equally well to various exercises in the five courses I teach, I will deal with only a few of the formulations and try to demonstrate how we have studied them. I would like to express my appreciation to all my teachers, associates, colleagues, friends, acquaintances and other sources of creativity without whose influence I would not have been able to develop my mapping abilities to current (1990) levels.

All of the following examples relate to inference/fact, map/territory associations.

On Consciousness of abstracting: I introduce students in my Intercultural Communication course to the structural differential diagram (see the chapter "From Electrons to Ideas") on the first day of class. I encourage awareness of multiple levels of abstracting whenever students discuss their own or anybody else's views/ perceptions. Near the end of the course I ask a guest speaker to address the class, focusing mainly on his or her experiences associated with relocating to the United States from another culture. I ask students to write a response discussing how the speaker's comments helped them to better understand course/text/lecture materials, specifically explaining how their knowledge of the structural differential diagram affected their perception of the speaker's words. Consciousness of the various levels of abstracting usually serves as a cornerstone for students' responses. I believe this formal checking of perceptions encourages further sharpening of students' mapping abilities.

I use a slightly different 'map-checking' exercise in the Communication and Conflict course, where I continually urge students to become more aware of their own evaluating processes. Practicing 'active listening' ("Do you mean...?, "Are you saying...?", "It seems to me...", etc.) prompts students to consciously compare their impressions of a partner's meaning with that individual's version of the meaning. Although this exercise may appear somewhat simplistic, many students have reported significant successes when they have tried active listening with spouses, friends, and other people in their lives. I begin each class with a map-check, asking students to summarize their impressions of what we have covered in the course up to that point. This regular practice also helps to reinforce consciousness of abstracting outside of class.

Expectations play a central role in human evaluating, influencing several aspects of daily affairs at many levels. Oftentimes, expectations determine the outcome of a situation through premature judgments, decisions and reactions. Unfortunately, we are frequently unaware of the effects of our expectations on our experiencing of the world. To demonstrate this impact, I play a

tape-recorded version of a widely recognized Vietnam-era protest song. Before I play the music, I ask students to simply relax and listen. Afterwards, I ask for comments on "what was heard." Some students focus on the lyrics of the song; others on the various instruments/melodies/harmonies/etc. Once it seems clear that different people have concentrated on different aspects of the sounds they have heard, I play the song a second time.

This time, however, I turn off the volume on one of the two speakers, eliminating the lead vocals and lead guitars, leaving only the back up vocals and percussion (students are not aware I have done this). Once again, after the song is over I ask, "What did you hear this time?" Almost invariably, someone will quickly respond with "Was that the same song?", "The words were different!", "I heard the drums this time.", etc. I ask people how they reacted *physiologically* when the expected lyrics failed to materialize. Responses usually reflect some degree of confusion, uncertainty, anxiety, or frustration as manifested in elevated pulse rates, quickened respiration, contracted muscles, and other indications of tension in the organism. I emphasize that these '*physical*' reactions to '*psychological*' maps represent common, everyday reactions to events, which occur when expectations go unfulfilled. I also refer to the 'missed events', i.e., whatever was going on that people failed to notice because they were waiting for something else to occur — something other than what was actually there. In the case of the music, they missed the conscious experiencing of the sounds that *were* coming from the boom-box while waiting for some *other* combination of sounds to occur. They simply were not as aware of the musical territory as they could have been, because of their expectational blockage.

We can then apply this exercise to daily interpersonal interactions; for example, misunderstandings due to faulty listening. "How often," I ask, "do you cut off or distort a message, thinking/saying, 'We've had this conversation a hundred times! Do we have to go through it again?'" This question usually gets some 'aha' reactions from students, especially if I substitute the statement, "We've heard this

song 100 times before! There's nothing new to hear!" By focusing on different aspects of music, and realizing the pervasive influence of expectations on perceptions, students can then begin to apply their awareness of their own expectations to their daily situations, conversations and relationships. I have found great benefits in using music to practice consciousness of abstracting, and students seem to agree.

Language heavily influences our perceptions of reality, as Whorf-Sapir-Korzybski have pointed out. The Whorf-Sapir-Korzybski hypothesis concerns the interaction between language and perception, emphasizing the shaping effect that symbols have on the ways we make sense of the world. For example, the English language tends to portray dynamic processes in terms of static events. A 'wave' is considered a 'thing' when really what we are referring to is water in motion. So too with such 'things' as 'a' storm, 'a' fire, 'the' wind, my 'life', and so on. Our failure to realize that this misrepresentation occurs can make it very difficult to recognize and accept life's changes, because we often expect things to stay pretty much the same over time. When they don't, we can't understand "how this could have happened to me!"

The prevalence of the verb 'to be' (in its various forms) in the English language reinforces our misguided belief that we can 'know' for sure what is happening (see chapter "To Be or Not To Be.") To say "this *is* the way things *are*" gives a static yet false sense of certainty in an uncertain, process universe. That little verb does untold damage when we believe that because something 'is' a certain way that it 'is' that way now and forever — leaving no allowance for the possibility (indeed, inevitability) of change. How often have the words "I *am* a failure" led someone to give up hope and quit life?

Clearly then, close attention to language can sharpen our mapping abilities as we try to comprehend life territories. Abstract language takes us further away from the territory rather than closer to it; as already observed, this only tends to delude us more thoroughly. To demonstrate the effects of higher-order abstractions, I ask students

in my Intercultural Communication course to generate examples of 'dominant American cultural values.' I list their responses on the chalkboard. As the list expands, it becomes clear that many 'opposing' values are cited (for example, 'profit' or 'success' vs. 'volunteerism' or 'helping others', 'individualism' vs. 'team work', etc.) and that, in almost all cases, the terms used represent high order abstractions which function on many levels (also known as multiordinality). Discussion usually centers around students' reactions to the disparity and vagueness of the 'values' cited.

To apply this awareness, I distribute copies of a transcription of George Bush's inaugural address, and I ask students to read it and analyze the speech in terms of the language used to convey his message. Attention is focused particularly on higher order abstractions and multiordinal terms, and the methods Bush uses to appeal to a wide audience. Upon closer inspection, students tend to find several instances of contradictions and reversals within the larger tapestry of references to 'dominant American cultural values' ('freedom,' 'justice,' 'democracy', etc.) They note discrepancies which, by their own admission, they didn't catch when they heard the speech or that they would not have noticed had they not been actively seeking abstract terms and generalizations. The significance of the power of higher-order abstractions to stir up emotion and motivate people to action becomes evident as students discuss the range and availability of a presidential inaugural address, impacting on billions of people worldwide.

Since improved mapping constitutes my central concern in all of the exercises which I have discussed, it seems appropriate to mention one activity which helps to spotlight the pervasiveness of semantic reactions. Students in my courses sometimes comment on their experience of periodic 'sensory overload' in trying to absorb and integrate the formulations of general semantics into their daily affairs. They simply cannot "keep all of it in mind"... "it's too much to remember!" In order to address these concerns, and to reiterate that reactions sometimes occur in the absence of any language, I use the following example. Just before the lunch break, I show slides

which contain images of banana splits, juicy steaks, fresh vegetables, steaming coffee, and other tantalizing delights. My intent becomes clear almost instantly, yet I continue to display images which tend to elicit physiological responses in those watching the images. (After a few minutes of this, students often object to this exercise, claiming cruel and unusual punishment.) When the lights are restored, I ask students to share their reactions to what they saw. Increased salivation and stomach-rumbling are frequently cited. When these common, everyday reactions are explicitly seen as physiological responses to flickering lights on a fabric screen, they can serve to demonstrate the extent to which humans tend to react *organismically* to maps, images, impressions, expectations, etc. which may be quite removed from the territory that they represent. By showing slides of food just prior to lunch time, I try to remind students of the range and impact of maps/mapping in human affairs. I urge them to proceed gradually and to hold realistic expectations about the speed with which they will be able to become aware of their maps/mapping and the impossibility of 'all.' I strive to instill an attitude of enjoyment and discovery as they become more conscious of their abstracting processes.

Regardless of what course content is taught in a class, the formulations of general semantics can help to clarify the mechanisms that enable students to contemplate that material. Indexing, dating, hyphenating, using quotation marks, improving mapping through awareness of the principles of non-identity, non-allness, multi-ordinality, non-elementalism, etc.; all of these can help students cultivate ever-deeper awareness of the world in which they live. The formulations of general semantics can allow humans to free themselves from the symbolically constructed traps which bind them to inefficient, problematic, or harmful methods of evaluating. Almost anyone can learn, practice and teach the formulations to others and thereby contribute to more beneficial human time-binding. The first, and probably most important step lies in making a commitment to incorporating the principles and practices of general semantics into one's own daily living.

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Educators who see themselves as continually in process, as learners as well as teachers, find the joy of becoming as they dare to accept challenges, to experiment, to try new approaches and apply the research of related disciplines.

Arthur W. Combs
Perceiving, Behaving, Becoming

A GENERAL SEMANTICS APPROACH TO TEACHING JOURNALISM

GREGG HOFFMANN

Society's Map Makers

The news media play a major role in our lives. For many of us, our images of the Soviet Union, Nicaragua, the Middle East and other far-away places come almost exclusively from the media.

To a slightly lesser degree, our images of our own city and state government come from the media. We might know somebody in government, or might even go to an occasional meeting, but most of our information and images come from news accounts.

Journalists are our society's map makers. The news helps mold our concept of 'reality.' Yet, what is the news? Few journalists can agree on one definition. Many consider the news an 'objective' mirror image of reality. But, is it a true mirror image, when journalists — the map makers — must pick and choose what they include in their news reports? And, can any reporter, no matter how professional, truly create a totally 'objective' account of any event?

I teach journalism courses at the University of Wisconsin-Milwaukee and, for the past few years, have incorporated general semantics-critical thinking principles into my courses. I believe journalism students, as prospective map makers, must understand their own biases and limits of perception, the abstracting process and the inherent limitations of the news business which make it impossible to report everything that happens.

I also believe that students must understand that journalists actually prepare a report about an event, personality or issue. Their goal should be to prepare as accurate a report as possible. However, they also must understand that they can never say 'all' about their subject and should not mislead the public into thinking they can.

Abstractions of Abstractions

One of the first things I emphasize to my students is that the news gathering process is based on abstracting. News is told through sources — participants or witnesses of an event. The reporter necessarily is dealing with abstractions, his own and those of his sources, from the moment he starts working on his story.

To illustrate this point, we use an example of an accident story. Ralph the Reporter has been assigned to cover an accident. He arrives on the scene and immediately starts to form his own abstractions. His senses take in what they can at the scene. Filtering takes place at his own sensory level.

Ralph then talks to victims or witnesses of the accident. Their abstractions of the event undoubtedly have been slanted or colored by the trauma of the event itself, the surprise element of most accidents, etc.

To make sure his information comes from 'credible sources,' Ralph next talks to the police. The police will have the 'official report' on the accident. However, where did the police get their information? They undoubtedly also talked to victims or witnesses to the accident and then formed their own abstractions in preparing the 'official report.'

Once Ralph has gathered his details, he returns to his office to write the story. Here more abstracting takes place. First, Ralph must deal with inherent limitations of our language when writing the story. He also must use some story-telling techniques to build interest. And, he likely will have to write the story in 'inverted pyramid form' — with what he deems to be the most important information at the start of the story.

Ralph undoubtedly must prepare this story on a deadline. Therefore, time limitations play a role in how much information he can put into his account. He also has space limitations. On that

day, he might have to tell the story in eight column inches. Once again, Ralph is forced to pick only certain details for inclusion in his story.

After Ralph prepares his story, his desk editor will edit the copy. The story then likely will go to another copy editor and perhaps to yet another editor before it finally appears in the newspaper.

By the time we have gotten this far in Ralph the Reporter's saga, students usually are nodding their heads in agreement that Ralph's story will hardly be an 'objective' mirror image of the accident. Instead, they see Ralph's task is to try to be accurate, fair and as balanced as possible in preparing his story. We go from there to talk about how general semantics-critical thinking principles might help Ralph accomplish his task.

Challenging Dominant Journalistic Values

At the risk of sounding elitist or pompous, I dare say that many journalism schools are not taking the above approach in teaching the news-gathering process. In fact, many are still basing their teaching on some long-cherished news values:

- 'Objective' news gathering, based on the 'facts.' The news should be a mirror of the event.
- Reliance on credible sources as the 'true' sources of information.
- The concept of "Telling It Like It Is."
- Inverted pyramid model for writing news stories.
- News must be new. Timeliness is very important.
- Prominence or celebrity status is part of the news.

- Conflict or controversy is important.

We do not reject those values in our classes, but we do challenge them by using general semantics-critical thinking principles. We start with Korzybski's Structural Differential, his visual aid for distinguishing levels of abstractions. (See the chapter "From Electrons to Ideas: The Structural Differential" by Robert Potter.)

About the second or third week of class, I usually bring in a wall chart of the Structural Differential*. We talk about the hyperbola at the top of the model representing the process world. We deal first with processes that our senses simply cannot pick up — such as x-rays, ultraviolet, or radio waves.

Of those things that our senses do pick up, only a portion are processed by the nervous system. Then we pick and choose depending upon our interests, purposes, moods, etc.

I usually ask the questions: What about the things we, as reporters, don't cover? Are they automatically classified as 'not news'?

We also talk a great deal about the limitations of our verbal levels of abstracting and other filters that take place on the higher order of the news process.

I use a variation of Ken Johnson's scientific model in discussing news gathering methodology and values. In the model, the process moves from observation to description to hypothesis to prediction to further observation, etc. The method is self-checking and continuous. All generalizations are held subject to further revisions that new observations may require. The process does not stop with

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* Copies of this wall chart are available from the Institute of General Semantics.

one cycle. It instead is constantly moving, re-testing and checking the validity of the findings.

This model, of course, recognizes that the world constantly changes. As Heraclitus put it, "No man steps in the same river twice." The scientific observer/explorer — which a journalist should strive to be — seeks the truths of the moment, not static, dogmatic truths.

We use this model to challenge some of the longheld journalistic values. For example, we discuss 'objectivity.' At best, we should consider 'objective' a relative term. I consider myself relatively objective if I describe what I see, hear, smell, taste, etc. I recognize my subjectivity when I give my opinions and feelings about an event. But note, even my 'objective' report involves *my* nervous system with its limitations, its history. Describing something as a mauve 1989 Cadillac involves *my* color perception, my color labeling, my familiarity with cars, etc.

We also discuss the mirror analogy by bringing a mirror into class. I'll walk around the room, asking students what they see in the mirror. Of course, the images vary from student to student. I also ask about what falls outside the borders of the mirror. We then talk about the individual perspectives of each reporter and the events that fall outside the borders of those perspectives and news judgements.

Then I slant the mirror, first left and then right. We then discuss how that could be compared to the slants a reporter brings to the news report.

We also discuss how 'objective' news gathering can stop at the hypothesis stage of the scientific model. The reporter gathers his information from his credible sources and then, in the name of 'objectivity,' does not get involved any deeper in the story. By doing so, the reporter may never test the truth of what he has been told.

We also talk about how most news reporters seldom repeat the scientific process. Instead, the reporter makes the cycle once and then stops the exploration process. News often is told like this. Daily newspapers report 'reality' in daily doses. TV reports 'reality' from the perspectives of 6 and 10 p.m., emphasizing the visual elements that are available on tape or in live reports. Radio news chops up 'reality' into five minute doses every half hour. Newsmen tend to create still pictures of a world that would better be represented as a moving picture. (And even the motion picture camera is aimed *by someone, for a purpose.*)

By expanding our discussion of general semantics/critical thinking principles, we talk about how "Telling It Like It Is" should probably read "Telling It Like It Seems To Me." We also talk about the limitations of imposing the inverted pyramid structure on information. Who determines what information is more important than other information?

The values of timeliness, prominence and conflict also come under some scrutiny. Is it more important to be timely than accurate?; especially when, as Stuart Chase put it, "a fact is a rapidly aging event." Wouldn't reporters be doing their jobs better if they completed the scientific method cycle a couple times before reporting a story? Has the news media's mania for the timely 'scoop', especially in this day of competition between the electronic and print media, led to inaccuracies and incompleteness?

I ask the class to name ten prominent people. We then discuss why these people are prominent and who assigned prominence to them. From that starting point, we talk about labeling, and we discuss the dangers of relying on 'credible' and 'prominent' sources to the exclusion of those who simply do not have the resources or political clout to gain access to the media.

Finally, we talk about the element of conflict in the news. Our discussion usually is within the context of the either-or nature of our language and thought patterns.

'To be' verbs can lead to the thought pattern: "something either is or is not." That thought pattern then can lead to pigeon-holing of issues into two and only two camps.

I usually ask the students to list any issues they are aware of that really have two and only two sides. After some thought, the students usually conclude that there are more than two sides to most issues. Yet, news accounts often put issues into two opposing camps. The media then concentrate on the conflict between those two camps rather than explore the similarities or deeper issues.

The students and I usually spend several days mounting these challenges to the traditional values and methodology of journalism. Then, we'll make a shift to discussing how general semantics-critical thinking principles can help the journalist (map maker) prepare a better report (map).

Applications to Reporting Methods and Writing

General semantics/critical thinking principles can have practical applications to reporting methods and writing. After we have used such principles to question traditional news values and judgments, we shift gears to look at methods.

We talk about applications to interviewing. The questions asked during the interviewing process, as well as how they are asked, can be very important. Reporters should not ask leading questions. By asking such questions, they do not solicit information in a true scientific manner. Instead, they impose a structure on the response.

Reporters also must use well-stated questions in interviewing. As Wendell Johnson wrote in *People in Quandaries*, "the terminology of the question determines the terminology of the answer" (1). One cannot get a clear answer to a vague question.

Well-stated questions — with good follow-ups like "How do you know that?" or "Why do you say that?" — can lead to the best responses. Ken Johnson, once my general semantics professor at the University of Wisconsin-Milwaukee, taught interviewing via what he called the 'roller coaster' technique. The reporter might start with a general question, such as, "What is your stand on foreign aid?" and follow up with a more specific inquiry, such as "How did you come to that conclusion?" or "Does your stand vary when dealing with Israel or the PLO?"

As Johnson writes in *General Semantics: An Outline Survey*, this technique involves systematic variations in levels of abstractions.

> If you give your reader only specific information, he may ask you 'So what? What does it all add up to?' He is asking for your interpretations and generalizations.
>
> If you give your readers only generalizations, he is likely to ask, 'For example?' He wants to know how you arrive at the generalizations. He wants data, cases, examples, descriptions, direct quotes (2).

General semantics-critical thinking principles also can help make reporters more aware of cultural and individual differences in the interviewing process. Interviewee_1 is not Interviewee_2 . By being aware of the sensory level of abstracting, an interviewer also can be more attuned to the non-verbal levels of communication. Does the source seem nervous or defensive? What does his or her body language indicate?

Structuring the Story

After discussing interviewing, we shift to structuring the news story. The dominant structural news model for decades has been the inverted pyramid. In that model, the information deemed by the reporter to be most important is put first in the story, and

subsequent details are listed in what is judged to be declining importance.

We discuss the limitations of this model. For example, with newspapers no longer the most timely media, is it always necessary to put the 'most important' information early? Would we perhaps be more effective to use more human interest and interesting feature leads to attract the reader into the story? We also discuss the problem of who decides what is the most important information? Will the individual reporter's or editor's judgment of what is important coincide with what the readers judge important?

Moving from the lead deeper into the story, we talk about structuring the body of the story. Here we talk about the theory of differential calculus, as interpreted by Milton Dawes. (See his chapter "A Grammar of Consciousness.)

Dawes maintains that one can better understand the structure of any 'whole' by breaking it down into smaller and smaller parts. We talk about how a reporter can structure a story by understanding the parts of it. These parts include the bits of information and details he has collected. If he does not understand those details — his facts if you will — he will have difficulty constructing a complete story.

We talk about structure when dealing with a specific problem in writing stories. For several semesters I noticed that students struggle most often with how to work direct quotations into their stories.

I finally came up with an effective guide, using a variation of Ken Johnson's roller coaster. One starts with a paraphrased paragraph to introduce a topic. Then, he moves to what the source specifically said about that topic. Another topic can be introduced with a paraphrased paragraph or two, and then the reporter can move again to a specific direct quote.

By varying the levels of abstractions when dealing with direct quotations, a reporter can satisfy the readers' needs to know both

general and specific information. The technique also gives students a visual model for working quotes into their stories.

Writing the Story

After we deal with structure, we usually spend a few weeks on working general semantics principles into the actual writing of stories. We emphasize the importance of avoiding allness and identification traps. We discuss E-Prime writing and the danger of 'to be' (is) verbs (3). (See the chapter "To Be or Not To Be: E-Prime as a Tool for Critical Thinking".)

E-Prime writing, as developed by D. David Bourland, gives excellent guidelines on how the trap of 'is' can be avoided. The news industry — with its emphasis on 'factual reporting' and tightness — is not ready to fully accept E-Prime, but a reporter can limit the 'is' problem by using more action verbs and more active than passive voice, describing events rather than falling back on labels. We discuss these in class at some length. As students practice writing (or rewriting) in E-Prime, they discover the variety of sentence structures available to them.

The over-use of 'to be' verbs can lead to identification and an either-or mindset. Something either is or it isn't. We emphasize that the 'is' trap can be avoided by using actional terms. Report what happened or what was *done* rather than labeling what 'is.' And, we emphasize again that "Tell It Like It Is" could probably be more appropriately termed "Tell It Like It Seems To Me."

We also stress how important it is for a reporter to get beyond the labels. A reporter must not accept labels as the event or the fact. He must move from higher order to lower order abstractions, become more extensional and explore deeper than labels. (See the chapter "Critical Thinking as an Extensional Orientation", by Philip Sabatelli.)

Labels can cause special problems in covering politics, where labels like liberal/conservative, right/left, Democrat/Republican are used every day to stand for certain ideals or values. Yet, there is little agreement on these terms.

We spend a fair amount of time in class emphasizing that reporters also risk perpetuating stereotypes if they do not go beyond labeling. The media can do great harm to minorities, the aged, women, etc., by using labels rather than descriptive language.

Polling has become a favorite technique of the media. We spend time discussing the best way to write about the results of polls. For example, is it accurate to write, "The American public supports Cause A," when that conclusion is based on a survey of 1,500 people? What about the sample of 1,500? Who made up the sample? Who took the poll? What was the structure of the questions? etc.

The reporter better serves his audience if he specifically reports, "A total of 932 people in a poll of 1,500 said they favored Cause A." The reporter should also include in the story who took the poll, for what purpose and the questions asked.

Meaningful use of quantifying terms can enhance a story. Say "43 students" or "about 40 students" rather than "several." Vague or incomplete quantifying terms, such as those in reports about some polls, can be misleading.

Our discussion of general semantics and reporting includes many other subjects, but to borrow an excuse from the media, neither time nor space allow us to include everything. Of course, any good general semanticist knows that even if we had the time and space we could not say everything about anything.

What can be said, however, is that general semantics-critical thinking principles can be used to heighten mass communication students' awareness of their roles as abstractors and of the limitations of their

business. The principles can be used to challenge old, sometimes hackneyed, news values and methods. And the principles can be applied pragmatically to help students improve interviewing and writing skills.

Reporters serve as society's map makers. We will never be able to train students to make the map equal the territory, but by using general semantics-critical thinking principles we can help them make their maps as accurate as possible.

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Hoffmann received the 1989 Sanford I. Berman Research Award for a project involving general semantics and reporting methodology. He has had two articles published in *ETC*. In 1988, he presented a paper, entitled "Mom Has Cancer," at the International Conference of General Semantics at Yale University.

All human knowledge is purchased at the price of ignoring something else.

J. Robert Oppenheimer

When we take in our surroundings, we select from them, not at random, but in accordance with our past experience and our purposes.

Earl C. Kelley
Education for What Is Real

The worlds we manage to get inside our heads are mostly worlds of words.

Wendell C. Johnson
Your Most Enchanted Listener

USING GENERAL SEMANTICS TO HELP THE EMOTIONALLY ABUSED

MAXINE THEODOULOU

Wendy's sobs distracted her classmates. It was her first day of school. She started to cry when her mother left her at the door of the first grade classroom, and didn't stop crying until it was almost time for lunch. Wendy's separation anxiety was intense. It lasted weeks longer than similar anxieties of her classmates. Now she hovers around her teacher's desk and mimics her words and gestures in a pathetic attempt to please her. Wendy lacks initiative and often does not complete the tasks assigned to her. New people and new situations seem to terrify her.*

Some days, Timothy's teacher describes him as the most difficult child in her fifth grade class. His aggressive behavior on the playground and his tendency to try to have the last word in every situation tries her patience. Timothy has difficulty tolerating ambiguity and frustration. His unpredictable temper tantrums tend to deter others from being friends with him.

Angela could be a very attractive teenage girl but she lacks a certain something, that joie de vivre that would set her apart. For some reason, Angela just doesn't seem to enjoy life. She mistrusts her perceptions and never seems to be able to act on her instincts. Her friends sometimes feel manipulated and wish that she would just ask for what she wants instead of trying to wheedle, coax and flatter them.

When asked to describe him, Jeff's college roommate says. "He's anti-social and insensitive. Just about any little thing can set him off." Jeff has difficulty understanding other people's points of view. If a poll of his professors were taken, their consensus would be that Jeff is an underachiever. Their friendly criticism often provokes an

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*Names have been changed to preserve privacy.

unpleasant confrontation, so Jeff is missing out on what could be an enriching college experience.

Emotional Abuse Defined

What Jeff, Angela, Timothy and Wendy have in common is emotional abuse. Emotional abuse, often described as an elusive crime, can seriously impair psychological growth and development. Emotional abuse strikes at the very center of the being — one's self-esteem.

Imagine being told you can't succeed; that whatever you do, whatever you try doesn't please the most important person in your life. No matter how hard you try, you just cannot win this person's love. Now imagine that you are barely four feet tall and you know you cannot survive without this person because you do not have either the physical or intellectual ability to live on your own. A verbally-emotionally abused child faces something like this every day.

Abusers use love as a bargaining chip. They ask their victims to meet impossible standards. Abusers frequently beat down their victim's resistance with challenges such as "Do what I say or get out of here." But even young children realize that they have no place to go. The abuser's arsenal includes labeling, exploitation, passive or passive-aggressive inattention, isolating — including such extremes as confinement in dark places such as a closet or a cellar — restricting or limiting social interactions to a very narrow spectrum of the community, and denying the victim professional help.

From constant denigration and sadistic verbal and emotional attacks, victims assimilate their families' or loved ones' opinion of their character and worth. Their feelings of worthlessness and self-blame become deeply ingrained. This constant psychological battering erodes their self-esteem. People who have been verbally-emotionally abused bear invisible scars.

Counseling

Ideally, these students should receive individual counseling. In the best of all possible worlds the entire family would be in therapy with special emphasis placed on effective and compassionate inter-personal communications.

But counseling services are sometimes stretched to their limits and even students officially classified as emotionally disturbed may receive only fifteen minutes of counseling once a week, sometimes every other week.

As a teacher, it may not be possible, or even desirable, for you to attempt individual counseling with students who have been emotionally abused. However, you may help in the classroom by offering different ways of looking at the world and at language. General semantics principles, worked into a variety of courses, can help all the students in the classroom without singling out students needing special help.

Some emotionally abused students will, of course, be harder to reach than others. The more abuse they have endured, the more severe their reactions will be. In some cases, it may be necessary to report the abuse to the appropriate authorities.

Some Ways To Make It Work

You can start to introduce general semantics in your classrooms by setting an example. Begin by rejecting any labels that may be used to describe a student (including those imposed by 'diagnostic' testing procedures). Then make every effort to dissuade your students from labeling themselves or each other. Celebrate individual differences, uniqueness.

Explicit directions, given in a calm tone of voice, help set the emotional tone of your class. For the verbally-emotionally abused

student, such a classroom becomes a safe haven. Students of all ages can participate in demonstrations of general semantics formulations, such as:

> Hold up a familiar object and ask the students to tell 'all' about it. They quickly learn that one cannot say *all* about anything. Korzybski (5) urges teachers to keep stressing the word 'all' when doing this demonstration until the students become so provoked with the term that they learn to hear it, read it, etc. with suspicion.

Ask students to tell you how to draw a familiar form (such as a triangle) on the blackboard. Follow the directions, but give the words different meaning from the one's intended. This exercise helps students realize that different people usee words differently.

> Write the word 'green' on the blackboard. Then ask the class what you have written. Of course, the word 'green' is not the color green, just as the word is not the thing spoken about. (A variation of this is to write the word 'green' using red chalk.)

In keeping with the formulation *non-allness*, help students understand that no one can be 'perfect' or do everything 'perfectly'. Encourage students to adopt a more positive outlook. Help them view their mistakes as a way to learn more about the subject and themselves. Encourage them to change "I can't" into "I'll try" and to change "I'll try" into "Maybe I can."

The verbally-emotionally abused student has undoubtedly heard, "You are stupid, clumsy, an idiot, a poor student" or some such. The 'are' in this case represents a variation on the 'is of identity' — a language structure that equates a unique individual with a class name (See the chapter, "To Be or Not To Be: E-Prime as a Tool for Critical Thinking".) The form of the statement makes it sound so certain, so final. Abusers frequently use it as a powerful weapon of

abuse. But clearly, the word is not the thing. It is a label *applied by someone.* Help your students to realize that they don't have to accept these labels.

A Few Sources For Materials

Korzybski's chapter "On Non-Aristotelian Training" in *Science and Sanity* (5) lays the groundwork for a number of classroom exercises. More demonstrations can be found in the books edited by Mary Morain (8,9,10). *Nothing* ***Never*** *Happens* (3) which comes in both a teacher's edition and a student's edition, provides classroom exercises and articles that can be used to stimulate discussions. The book is out of print, but can usually be found in major libraries.

Some Ways That General Semantics Helps

The results of verbal-emotional abuse can last long beyond the childhood and the teenage years. Wendy, Jeff, Angela and Timothy each reacted differently to the abuse that they suffered. Just as reactions differ, so will positive responses to general semantics differ. For example, learning that "the word is not the object" may impress one suffering from verbal-emotional abuse while another person may attach more importance to learning "the map is not the territory." Some need to learn that no one can know 'all' about anything before they can start to make positive changes. For others, the notion of change opens new possibilities, helping them to see they are not 'stuck' in their present situation. So, teach the full spectrum of general semantics, because all the formulations and extensional devices may be needed to help a verbally-emotionally abused student implement positive change. Modeling will reinforce what you teach.

Everyone in the classroom can benefit from learning how to evaluate words and statements in a mature, scientific way. The evidence shows that many students increased their critical thinking

abilities and sharpened their writing skills after they were introduced to general semantics in their classroom. (See the reference in the chapter "Harnessing Self-Reflexiveness for Creātical Thinking.")

Additional Reasons for an Early Start

Janet suffered most of her life because she didn't properly evaluate other people's statements and opinions. Often she incorporated this mis-information into her decisions, so sometimes she acted against her own best interests.

Janet, emotionally abused throughout her childhood and teenage years, did not discover general semantics until she became an adult. Once she learned how to use the formulations, she was able to change the self-defeating statements that she usually told herself. Now that she can evaluate others' statements, she knows how to ward off verbal blows and she can overcome the remarks that she previously allowed to injure her. She has achieved a mature, scientific orientation and she has made positive changes in her life. Janet firmly believes that general semantics helped her to heal the effects of the emotional abuse that she suffered.

When she learned that the word was not the thing spoken about, Janet decided that she did not have to accept someone else's opinion of her, or her abilities. Then she discovered that she was the mapmaker and she found that she liked the maps she made. And knowing that she could 'redraw' maps helps her expect less of herself and others. In short, she no longer expects, or wants, perfection.

Janet doesn't find it easy to isolate the exact formulation that helped her the most, although she thinks it might be learning "the word is not the object." When asked, she usually just says that she rates *Science and Sanity* as one of the most important books she has ever read.

Learning how to use the formulations of general semantics during her formative years, or even when she was a teen-ager, could have saved her years of suffering. Alas, there are many 'Janets' in our classrooms.

Chandler (1), Johnson (4), Lauer (6) Levinson (7), and others have shown how students benefit when general semantics becomes part of the curriculum. Levinson found that students taught general semantics exhibited increases in self-esteem and decreases in feelings of powerlessness.

Students of all ages can reap lasting benefits from learning more about how their language works. The students who have been verbally-emotionally abused can begin to erase their invisible scars.

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Maxine Theodoulou's recent professional assignments include working with battered women and with families of the developmentally disabled. While still in school, she taught art to both retarded and autistic people and arranged to exhibit their work around New York City and in Albany.

The power and influence that words can exert have held a special fascination for her since childhood. She earned her doctorate at the Union Institute. In her thesis, she devised a way for those who have been verbally-emotionally abused to use general semantics to heal themselves.

"You'd be interested to know," he (the psychiatrist) said..., "how many people come to me with troubles that are largely a matter of nomenclature. They suffer the tortures of the damned at the idea that a particular label may fit them or may not fit them. Am I a man? Am I a coward? Am I a failure? Am I an invert? Sometimes, simply, am I a lunatic? If you could only get it through your head that it's you, only you, who's pinning the label on or taking it off, you'd have your problem half licked."

Louis Auchincloss
Venus in Sparta

... it obviously makes a difference whether we consider ourselves pawns in a game whose rules we call reality or as players of the game who know that the rules are "real" only to the extent that we have created or accepted them, and that we can change them.

Paul Watzlawick
Change

ASSUMPTIONS FOR NEW HIGHER EDUCATION PARADIGMS

PETER FENNER

More, perhaps, than most others, general semanticists can appreciate that the university is no more the education, than is the map the territory. The assumptions on which we operate must be challenged and re-evaluated. Our entering university populations are no longer what once we thought they were. The role of universities continues to undergo change — both for survival and relevance, factors that do not always operate at parallel purposes. Expectations of the output of the system should also be reconsidered. And, perhaps most significant, we should take a careful look at the nature of the delivery system for higher education (and its precursors).

Today's Changing Environment

We live in a time of incredibly rapid changes. Current models of higher education, as well as the precursors to them, simply are not preparing us for those shifts. We are taught neither to expect change, nor to cope with it.

Consider how much has happened in a few weeks early in 1990. The Berlin Wall. Noriega of Panama. The Communist Parties in most of Eastern Europe. Middle Eastern Political hotbeds. The junk bond market. Notebook computers. National department store chains. Nelson Mandela and South Africa.

Today's Shifting Paradigms

Examples of how changing behaviors caused by shifting paradigms affect higher education are evident in areas as diverse as healthcare systems, services delivery and management, locus of on-the-job control, information science and conceptualization, politics,

economics, environmental preservation and husbandry, demography, and preservation of privacy and personal rights.

The traditional campus environment is changing, whether by design or accident of real population being served. Our college and university population has changed in shade and gender, and so have the purposes and goals and aspirations of that microcosm of today's pluralistic society.

Higher (and earlier) education is based on old assumptions, many of which are no longer valid today — if ever they were. Understanding this will help us better recognize the need for pluralistically-based empowering and unbounded educational agenda — to supplant a single-value-based, bounded, prescriptive system that is the 'old' paradigm.

Population pressures must be considered. In the United States, family size is shrinking. In Third World countries, it isn't. Moreover, improved health means greater lifespan, which translates into more people. Global and national demographics must be much better considered than in the past. The U.S. population continues to diversify. Misconceptions about our population abound. Did you know, e.g., that 2/3 of U.S. children in poverty are Whites? Or that about 1/8 of U.S. births are out of wedlock — half to teenagers? In 30 years the family with only a working father dropped from 60% to 7% of all in the U.S. A majority of today's babies will not be living with both their parents by the time they're 18 years old. In some locations, serious crimes affect 1 out of 5 households. Suicides rank only behind accidents as death causes among teenagers in the U.S. Sexual abuse is reported to affect 1/4 of all U.S. girls and 1/10 of U.S. boys. Illiteracy affects 13% of U.S. adults. Our population includes 11% disabled.

Moreover, career instability results partly from rapidly changing job requirements. Many of today's jobs did not exist a few years ago, and many specialty trained workers have no new jobs to go to as old functions are being phased out or replaced.

It once was common for students to pass uninterruptedly through the educational continuum. More common today is a discontinuous pattern — they move along a bit, relocate or stop out, drop back in for a while, and so forth. The continuum, with some overlap includes: nursery schools, day care centers, kindergartens, elementary schools, middle schools, junior high schools, high schools, colleges, professional schools, graduate universities, and continuing education institutes.

Population 'waves' create unevenly sized grade-level populations. Hiring and firing cycles for teachers and faculty are counter-productive. Classroom space, unused for significant periods of time (from overnight to several years), could be better scheduled.

A substantially larger percentage of our growing population is graduating from secondary schools, as well at higher degree levels. Our curricula have not very realistically been adjusted to recognize the needed combination of high quality and pluralism. The increasingly high cost of higher education has not yet been reconciled with needed national priorities for those curricula.

Curriculum studies have not agreed on a single 'best' 36-course pattern of prerequisites and corequisites, major and minor subjects, and unbounded electives which now defines most undergraduates' work. They have, however, tended to agree on roughly nine areas for required exposure/competency: thinking, literacy, numeracy, historical conscience, science, values, art, international and multicultural experiences, and in-depth study. Business leaders insist that: "effective planning and cooperation between academia and business are essential to achieve the necessary changes in higher education."

Clearly, 'traditional' U.S. higher education has not yet picked up on our changing realities — both here and globally. Alternative higher education paradigms could better address some of those changing realities.

Alternative Higher Education Paradigms

Here's a listing of components in a 'self-responsible model' that is an amalgam of several successful alternative higher education models already in use. It differs — both in process and in expected outcomes — in described ways from the prevailing 'traditional' U.S. model:

1. Admissions are open — full access is available (rather than limited, based on artificial criteria that often are based on historical or non-relevant data and may reflect the restricted attitude of many traditional institutions in controlling their populations);

2. Documented experiential background and academic work are part of the admissions process (rather than the new degree, for which they serve as a starting point);

3. Degrees are based on demonstrable proficiency and credit equivalents (not time served and credit earned);

4. Goals are developed to meet student needs (not unalterable fixed educational goals);

5. It is aimed at mid-career mature learners, e.g., graduate students from 25 to 80 years (not pre-career 18-26 year olds). It tends to be more successful with older, more mature persons, so if open to undergraduates, does best when appealing to persons already in the labor force;

6. World-wide learning is encouraged (not based in, or limited to, campus classrooms and laboratories);

7. Learning resources in their fullest breadth are encouraged and sought after (does not lean heavily on textbooks as primary or exclusive information sources);

8. Even while recognizing the importance of outside experts, it encourages self-direction and independence (does not cultivate dependence on campus authorities);

9. Though often working largely in traditional areas, is very permissive towards new (inter-)disciplines, problem-solving, and new global issues (rather than the typical orientation towards strictly traditional disciplines and established professionals);

10. Seeks to produce life-long learners (not a 'finished product').

11. A goal is product acceptance from the invisible college — current experts in the relevant field who recognize each other's work — (not a "one size fits all" prescribed clone of an outdated product of an anonymous curriculum committee);

12. Time is used productively: when there is no progress, there is no schooling; without motivation, there is only exit from the system without progress (vs. the permissible non-productive marking of time at a place where the uninitiated and unmotivated may hide for a few years then emerge with a degree, or finally be expelled after much wasted time);

13. Due to frequent ties to careers in progress, there tends to be a high correlation of job performance and degrees attained (rather than a missing relationship to on-the-job performance by program);

14. Learners relate degree work to their jobs, to career goals, to personal interests (not the too-frequent training received for jobs that don't exist);

15. Avoids on-campus costs and disruption of jobs and family life (not the cost-inefficient and disruptive schedule to professional and personal life typical of a campus situation for adults);

16. Has flexibility and responsiveness that are ideal for adults needing to prioritize among life responsibilities and plan for themselves (not the rigid system that precludes or minimizes participatory planning);

17. Learners may chair their own degree committee of peers who respect the chair's role and support it through verification of documentation by experts and counseling based on their own talents (not the usual authority model that abnegates any inherent talents of the degree aspirant);

18. Has an outcome that is predicated upon a properly reviewed and approved individualized contract for completion (accountability is given by egress quality, rather than ingress requirements.)

19. Curriculum is based on learner needs and is usually rather flexible almost to the end (not early lock-in that is required by institutional needs that are often expressed via 'bread & butter' lower-level courses and other required courses that will support a department carrying as few as 2 or 4 majors);

20. Happiness with the final degree result is typical (not the usual grousing about requirements imposed that have so little bearing on ultimate and real need of the student); and,

21. Governance of the institution is by all publics, operating in the governance environment as peers (rather than the administrative-dominance model, or a faculty senate, or even a Board-run alternative.)

Research is clear that nearly all non-traditional degree holders believe their degree to be as good as, or better than, a traditional degree. Among non-traditional, legitimate, baccalaureate holders going for a master's degree or a doctorate, most are admitted by the traditional school of their choice. Employers tend to be

unconcerned with institutional reputation, and do not discriminate against external degrees. Their concern remains: performance!

A new paradigm educational institution, at any level, should be accountable via the traditional major regional accreditation criteria: (1) legal authority to operate, (2) program and fiscal stability, (3) adequate records, and (4) good match between institutional mission, publicly stated operations and final product delivered. It should operate so as to protect the consuming public (students and everyone else who relies upon graduates and their records) in the tradition of maintaining 'safe practice.' In other words, at worst, no aspect of our educational system should create harm; at best, all parts ought to be beneficial. Accountability, internal consistency, high quality expectations and delivery, adherence to mission, — these are the sorts of issues that should be raised.

Safe Practice

I believe that higher education should adopt the safe practice principle that is mandatory in many other professional circles. All consumers of the higher education product should have some common understanding of the meaning of the degrees. There should be predictability and accountability in all subsystems of higher education — wherever situated — especially for data generated through registrar's offices. That accountability — whether of students, faculty, or administration — should be no less than we expect from any other professional endeavors (after all, these persons at some time may well be making life and death decisions over you or others in your family!) Ethical and legal practices should be paramount as umbrella requirements over all aspects of the educational spectrum and all of its sub-endeavors.

With safe-practice accountability, good quality control, and with degree holders who are acceptable as peers in the appropriate invisible colleges, we no longer need make judgements based on the degree to which 'residency' or 'correspondence' have been balanced.

It is only, after all, the safe practitioner we seek as output; the journey that leads to that output may well differ among individuals.

There do, however, remain important questions about style of the institution. If it is a distance learning institution in the main — or in its entirety — what will be its stance opposite social issues: should it be proactive in matters of social, political, or educational policy? Should it make scholarship monies available? Should there be fee waivers on bases other than scholarship? Is need the only criterion to be considered? Should it seek some alternative to regional accreditation? How — if it does — can it 'protect' its graduates, other than announcing that status to entering students?

If the college offers the terminal graduate degree, should it be a Ph.D, D.A., Ed.D., or what? The first represents a research degree that aims for life-long professional scholarship. There are other reasons to pursue doctorate education, and perhaps more appropriate doctorate initials for those purposes. Attention should be paid to appropriate research traditions, invisible colleges, and proposed ultimate uses and acceptability of the graduate degree in that context.

Above all, the short institutional mission statement may be an extremely critical one. It will also help, like the U.S. Constitution, in keeping us looking ahead.

Looking Ahead

Moving from extant models toward more idealistic, and perhaps better universal models is neither a one-step, nor a simple process. Permutations of the 'traditional model' and the alternative model described above may result in an appropriately structured and flexible system that would recognize the changes wrought by modern technology and by people themselves. Personally tailored, societally responsible, and institutionally accountable higher education has its niche ready to be filled. It is one way to open access for advanced

degrees to many for whom it is now denied. Surely many can demonstrate and document a knowledge base in ways superior to those now used on many 'traditional' campuses in the U.S. In any future model, a 'safe practice' orientation requires exceptional clarity of purpose, process and expected outcomes.

We should continue to question assumptions made at every level of the educational enterprise. We should help divergent thinkers converge, and assist convergent thinkers in divergent assessments of the system! Without these challenges, there is too much comfort — or complacency — and in complacency is buried the status quo and our nation's future.

The power of "we the people" is in the *of* and *for*, and *by*. Successful higher education ultimately will rely on a similar self-regulating base — also steeped in useful cognitive and rich historical traditions.

While we do have ample evidence that futurists' predictions are among the worst there are, we also know what those same inventors went on to invent! In short, it is the prepared mind that can act, interact, and react. If the preparation is limited to rote memorization, advances will not occur as the need arises. Our educational systems should be altered to reflect changing assumptions that accompany the changing paradigms under which we would like to be able to survive — as individuals, institutions, and societies — and in environments that will allow us to thrive without detriment to other beings.

Peter Fenner earned his Ph.D. from the University of Illinois in 1963. Earlier he held faculty positions at the City College of New York, University of Pennsylvania, Governors State University, and Purdue University. He has traveled the higher education administrative hierarchy through an academic vice presidency and vice chancellelorship. During his convergent thinking phase, he published papers and books relating to his geological education and training. Now, applying his experience

more divergently as President of Compass Group, Inc., formulating new directions in organizational effectiveness, he writes reference books and consults in applied health areas and in higher and continuing education. As a member of the Faculty of the Union Institute Graduate School, he enjoys his work with doctoral learners, following his own admonitions wherever possible.

Professions are subject to the same deadening forces that afflict all human institutions: an attachment to time-honored ways, reverence for established procedures, a preoccupation with one's own vested interests, and an excessively narrow definition of what is relevant and important.

John W. Gardner
No Easy Victories

GENERAL SEMANTICS AND GLOBAL INFORMATION FLOW PROBLEMS

SHEILA FOGEL

We are increasingly coming to live in what Marshall McLuhan calls a "global village." Communication satellites, high speed transmission of news and data, computers, and other communication and information technologies are changing the manner in which people from different cultures communicate with each other. Individuals and societies are being immersed in a sea of shared information. In this context radically different cultural perspectives have arisen concerning: the control of communication and information technologies in alien cultures, the flow of information between societies, the meaning of 'news,' and the effect of Western media programs.

The 'First' World, or democratic, nations have developed the technologies transmitting most of the data internationally. We are being challenged by the 'Third' World, or non-democratic, countries, the recipients of this technology and our messages. 'Third' World societies complain that alien messages affect their cultural identities, erode their national boundaries and effect their countries economically, politically, and socio-culturally. These issues are calling into question Western concepts, attitudes, and beliefs, embedded in the development of our technology and our media messages.

Obviously, we need to develop greater awareness and sensitivity to resolve both current and future disputes. Not so apparent is how so difficult a task may be accomplished.

As a result of changes occurring in society, the role of educators is also changing. Lecturing alone is not enough; we must help students become active participants with skilled evaluative powers both in and out of the classroom. We must be prepared to teach students to cope with a society that is becoming more complex, one in which individuals will need to process and use the ever-increasing deluge of information being spewed forth by the various media and

computers, and to live in a multi-cultural world that is 'shrinking' every day.

Currently, the trend is to help students develop their 'higher order thinking skills', their 'critical thinking' abilities, their 'evaluative' thought processes. But, there is little agreement over what methods should be used to accomplish this task.

One method which offers a number of useful tools is general semantics. Once we learn its principles, we may go beyond the three 'laws of thought' passed on to us from early Greek times, and overcome our penchant for detached verbalism. We may develop semantic awareness that will enable us to revise our incorrect assumptions and beliefs, and become better evaluators.

Learning Consciousness of Abstracting

Language plays a major role in forming and in representing our thoughts. As an arrangement of symbols, it becomes a 'map' of the reality, the 'territory,' we think we see. While a map is useful, it cannot represent *all* that exists within a territory, nor will any one 'map' be exactly the same as any other 'map,' even for the same 'territory.'

We must reject the aristotelian 'law of identity,' A is A, that enables us to talk as if the 'map' is the same as the 'territory.' As Alfred Korzybski explains, while "Any map of language... should, in structure, be similar to the structure of the empirical world," he also states that "the map is not the territory it represents," the "word is not the object it represents" (8). He counsels us on how to surmount the "semantic process of inappropriate evaluation" which we have inherited and still use today. We have to develop our semantic awareness through consciousness of abstraction (7, 8, 9).

Since our complex technological world is increasingly becoming filled with more stimuli than we can possibly take in at any one moment,

we have to develop our semantic awareness to reflect this fact. Through *consciousness of abstraction* we become aware of what we are 'taking in' as well as what we are 'leaving out,' of differences as well as similarities.

Eventually, we begin to see that different perceptions often lead to different inferences and conclusions concerning world situations, and that these are based on individually unique experiences, assumptions, attitudes, and beliefs. We should battle the erroneous notion that there is 'truth' or one 'reality.' The meanings each of us derive depend on our culture, our language and our personal experiences. Different people from different cultures using different languages will very likely have quite different world views.

Static Maps of a Dynamic World

Students should also be taught to discard the age-old 'maps' which portray the world as a static place. This "grossly antiquated method of orientation" described by Aristotle 23 centuries ago, which is still 'alive' today, allows us to perceive humanity through a kind of 'Philosophical grammar' known as 'logic' (8).

Verbal utterances appear to be something 'objective,' detached from the communicator who uttered them, existing in a static world that can be verified for correctness. We may well imagine the stress people encounter when their 'outer' world is not isomorphic with their 'inner' world or the world of others, yet they assume that it should be so.

Instead, we must teach students how to create a dimension to their thinking and evaluative processes which includes an ever-changing world, with every individual and culture being distinct from all others. Their verbal behavior must reflect the reality of differences in meanings of words, terms, statements, and situations, all of which derive naturally from the many differences which exist in the people who use them. As Justice Oliver Wendell Holmes said, "A word is

not a crystal, transparent and unchanged; it is the skin of a living thought and may vary greatly in color and content according to the circumstances and the time in which it is used" (16).

Consciousness of the Limits of Categories

Even at the outset of the discussion concerning communication and information technologies, we see how quickly misevaluation occurs. We are handed a host of incongruous and misleading generalizations to identify the parties to the dispute. In some instances, we call ourselves one of the 'First' World nations, while others are the 'Third' World societies. Or, we are one of the 'developed' countries, and others are the 'undeveloped' ones. Other times we say that we are one of the 'aligned' countries, and they are the 'non-aligned' ones.

We have to be aware that categories are created *by people for a purpose.* The underlying and unstated assumption is that these labels will conjure up instant recognition of the parties, as if they were readily ascertainable entities. Yet, these taxonomies are arbitrary. The names do not imply clearly defined borders such as national boundaries, or even that an imaginary line exists such as that which identifies the equator. The terms are, in fact, relational. They depend on the national interests of the parties

'First' World nations generally refer to democratic societies where information technology is privately owned. 'Third' World countries are usually the societies where information technology is owned by the government (5). However, even at this early juncture we may observe that something is amiss. The implication is that there must also exist a 'Second' World (15). In fact the term 'Second' World countries is used to designate Communist societies in which the government owns and manages the communications media (5).

By using labels in this manner, we would certainly find ourselves in a quandary if we attempt to place in the same category a number of

East European countries currently undergoing reform. We may ask: can East Germany, Hungary, Poland, Czechoslovakia, Romania, and Bulgaria all be categorized with the 'Second' World label? While all are Soviet bloc societies and part of the rapidly disintegrating Communist empire embracing democratic change, we will find many more differences among them than similarities. Each possesses a different culture, different people, different languages, different forms of government. Even reforms are different for each. East Germany is undergoing change peacefully, while Romania's change is violent.

Peter Worsley argues that lumping together groups of societies can "hasten on their disappearance... classes, races, civilizations as if we were afraid to name them individually..."(15). However, if we use the extensional device known as *indexing*, by placing subscript numbers next to each country within a category, we indicate an awareness of the commonalities of each as well as the differences. All we need do is to remember that Second World nation$_1$ (East Germany), is not Second World nation$_2$ (Hungary), etc. and we become aware of the limitations of categories.

Revising Our Either-Or Thinking

In order to become better evaluators, we need to revise two other 'laws of thought,' the 'either-or' in our thinking, and the erroneous belief that entities can not belong to two contradictory categories. As will be illustrated, labeling a nation 'developed,' 'First' World, or 'aligned' does not always mean that the 'underdeveloped,' 'Third' World, and 'non-aligned' societies can not be 'democratic,' capitalistic, and 'aligned.'

When we label societies either 'developed' or 'underdeveloped,' the names do not refer to the presence or absence of change, or even to the nation's economy. All societies have undergone millennia of change (15). Economically, poor nations have lengthy histories indicating that they have highly developed cultures (2). Rather,

'undeveloped' may refer to what was done to a society by others. In fact, one Caribbean historian entitled his study of African history "How Europe Underdeveloped Africa"(15). These designations not only affect the way people think, but the way they interact with each other.

Let me clear up some of the other misnomers which abound. From a political standpoint, 'First' World countries are not the only 'democratic' societies. There also are capitalistic, democratic 'Third' World nations. Geographically, the 'North' is not just occupied by 'First' World or 'democratic' countries, since the Soviet Union exists in the Northern Hemisphere as well (2). But the Soviet Union is not being accused of Western domination in the communications and information issues, of cultural imperialism and colonization tactics based on the fact that they are reigning supreme as the developers and exporters of these technologies.

Similarly, the notion that some countries are 'non-aligned' countries is incorrect. These nations have always believed in their right to select "a route independent of the two superpowers" (4), and many align themselves with the 'First' World, while others align themselves with the 'Second' World (15).

We may begin to see how disoriented we can become if we are forced into using 'either-or' thinking, or believing that entities must be neatly placed in only one category. Rejecting Aristotle's 'law of the excluded middle,' we recognize *at least* three categories of countries and are free to place societies in seemingly contradictory categories if necessary. Only then may we loosely define 'Third' World nations as some of the countries in Asia, Africa, and Latin America, which, to varying degrees, lack advanced information and communication technologies. We may speak of these nations as a group, albeit not a homogenous one.

Information Flow and Our Paradoxical Maps of Each Other

The issues surrounding the global flow of information involve far more than using correct labels. They also involve more than an equitable sharing of knowledge or establishing a mutual understanding among nations. Nations clash over such problems as: *who* has access to communication and information technologies, *how* access may be acquired, *who* gathers, stores, and disseminates the information, *what* is the direction of the 'flow,' *who* defines 'news,' among other important issues.

Because all nations recognize that communication and information technologies are critical to their development, that national maintenance and survival depend on them, acquiring such technology becomes an 'ideal.' Statesmen, politicians, and scholars dispute how such an egalitarian goal can be implemented.

The controversy immediately becomes heated when we discuss *who* has control over technologies on foreign soil. Since the 'First' World countries developed and exported communication and information technologies, media programs, and 'news,' the United States and other Western countries stand accused of "cultural imperialism and colonization tactics" (12). Yet these 'First' World nations assert that many information-receiving countries possess neither the technical know-how nor the funds with which to develop them on their own. 'Third' World countries, on the other hand, complain that information technologies are an expansion of Western business; they provide a self-sustaining market but the ownership remains with the 'First' World (1).

How access may be acquired is another controversial issue. In the United States, we rely on our media to supply us with information and entertainment programs. The media depend on industry for advertising dollars and, in turn, on the public through their purchase of products. Without industry, our media could not exist, but many 'Third' World countries have neither the industry nor the necessary infrastructure with which to develop these technologies (12).

Who gathers, stores, and disseminates information? In the West, it is "The Big Four" — Associated Press (AP), United Press International (UPI), Reuters, and Agence-France-Press (APF) (13). Many consumer nations are hostile toward these Western news agencies, accusing them of deciding for society "what it should know" (13). In actuality, the owners of the Western media market, as a whole, consist of 1,700 newspapers, 11,000 magazines, 9,000 radio stations, 1,000 television stations, 2,500 book publishers, and seven movie studios, but these comprise "fifty corporations... fifty men and women who head these corporations..."(3).

In response, a number of 'Third' World cooperative news agencies were formed in the 1960's and 1970's. Inter Press Service (IPS) was formed in 1964 by journalists who focus on the 'developmental' concept, a new and different kind of journalism than exists in the West (15). While not clearly defined, it holds that instruments of communication are to help build their nations, and to support authority (5). The Non-Aligned News Pool was founded as a means to prevent 'Third' world citizens from becoming passive recipients of 'distorted' information, to end the dependence and domination created by the Western media.

The Western concept of journalism, however, holds that the press must be free of arbitrary government control (5), and the West is fearful of placing advanced technology in the hands of nations that might manipulate it for propaganda purposes. Conversely, 'Third' World nations state that, economically, the press could not exist without state intervention, and they are alarmed by the constant deluge of media messages which they feel endanger their cultural identities and their sovereignty. They believe that a tide of alien media messages will alter the perceptions of their people and result in a Westernization of their societies.

To Western journalists, 'news' should be 'objective.' It is whatever readers or listeners find important. 'Third' World nations believe that Western journalists propagate distortions about their cultures, that they only become significant through murder, suicide, drought,

famine, and starvation (5). While 'news' flow accounts for only a small portion of the information disseminated, it is at the center of the controversy (12).

The direction of the flow is another controversial issue. Most information does flow from the 'North' to the 'South,' a one-way or unidirectional flow, which 'Third' World societies consider imbalanced. Yet, if the direction of the flow should be reversed, the 'North' would view it as a threat, since many countries in the 'South' do not embrace Western ideas, values, and concepts concerning 'news' and information (11).

Conclusion

As modern technologies increase the yearly volume of information flow, the globe is shrinking, but the debate among nations is intensifying. We cannot expect general semantic principles to solve the problems or to produce agreement. But they can help us create a climate for *understanding*— including understanding why we do not agree. Then we may seek creative ways to compromise or minimize the harmful effects of our disagreements.

In a world of unique individuals, with different experiences, different cultures, different languages, perhaps *understanding* should be our goal. Far better to have understanding without agreement than apparent agreement without understanding.

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The action of putting things that are not identical into a group or class is so familiar that we forget how sweeping it is. The action depends on recognizing a set of things to be alike when they are not identical.... Habit makes us think the likeness obvious.

J. Bronowski
The Common Sense of Science

A GRAMMAR OF CONSCIOUSNESS

MILTON DAWES

It seems as if a preponderance of nouns over verbs in our languages makes it more likely that we will think of things rather than processes. But we shouldn't put all the blame on language or our use of language. A great deal of what we see, hear, touch, etc., is experienced as being relatively static — probably because many processes are imperceptible except when observed over periods of time. Except through time lapse photography, for instance, we don't 'see' a plant growing.

Considering the fact that we live in a world of change, changing relationships, and processes, we get increasingly out of touch with our environments, ourselves, and others, when we forget that many of our labels (classified grammatically as 'nouns') are terms representing 'activities.' (Even the term 'activity' is classified as a noun.)

We live in dynamic environments; but the language, models, 'maps' etc. of our experiencings of these environments are relatively static forms of representations. It would be of tremendous advantage to us if we gave more attention to the importance of **'meta-maps'** — maps we could use as tools to help us correct, update, modify, and improve the accuracy, not only of our 'maps', but also our mapmaking. We live in evolving environments. We are the products of evolving processes. Our maps and map-making, to be more useful and less disorienting, should reflect the processes around us, and the processes that we are.

As organisms-in-process we make plans, act on decisions, manage situations, give advice, show someone how to do something, organize our affairs, and so on, but we don't as a rule see ourselves in the roles of planners, decision makers, managers, organizers, teachers, and so on. We usually associate these activities with business executives, teachers, and other professionals. We don't usually see ourselves in these roles — nor see others as selves in certain roles. We see, label, and relate to the person as if the whole person was

'teacher,' 'secretary,' 'priest,' 'truck driver,' 'mechanic,' 'doctor,' 'executive,' etc.; we often forget the whole constellation of selves that constitute the individual. Among the many benefits we can derive from thinking in terms of 'selves' are in the areas labelled 'self-esteem,' and 'self-image.' When one self feels disappointed, or confused, or anxious, upset, frustrated, insecure, unworthy, and so on, the whole system does not have to crash. Through the intervention of the executive self, other 'selves' can come to the rescue and give support.

The word is not the thing, but the act of *differentiating* — in labeling our activities, and *recognizing* that we are labeling our activities — is one way of jarring conscious activity into selves-conscious activity; one way to present to ourselves a more accurate map of ourselves. More increments of information about ourselves increase the potentials for higher levels of integration of ourselves. (In popular terms "being more together" and "being centered"). Increased differential awareness (executive self-awareness) that we are doing, and what we are doing, provides us with increments of information which we can use to decide whether to stop, continue, modify, change, whatever we find ourselves doing. **Increased awareness of our activities, and the effects of our activities on our inner and outer environments, provide us with an integrated awareness of what Korzybski has labelled *the organism-as-a-whole-in-an-environment principle.*** Better maps of ourselves as 'variables' in our environments can be used to increase our effectiveness, to minimize the intensity and frequency of distressing experiences, and much more.

A Grammar of Consciousness

A 'grammar of consciousness' is an invention, a heuristic tool suggesting another way of 'looking' at conscious activities as if they were operating in particular kinds of relationships, with their internal and external environments.

If we accept that 'consciousness' labels a set of activities taking place in environments, then it seems reasonable to find some ways of characterizing these relationships. A 'grammar of consciousness' is simply one such characterization where we advance the proposition that the structure of language provides us with clues to the structure of consciousness.

It may not be unreasonable to propose that it was through the creation of language, and the interaction of human consciousness with language, that human conscious activities developed selves-consciousness activity, and discovered their own inconsistency and insubstantiality. But it could be equally true to say that it is mainly through language that conscious activity strives to maintain selves-consistency, and make sense of itself.

It is mainly through language that ephemeral conscious activities attempt to hold onto themselves — recognizing that language is much less ephemeral and more dependable. Through language, conscious activities attempt to create threads, form links, establish connections, fill in gaps, and provide themselves with some kind of continuity.

I would expect that conscious activities, in order to communicate with and understand themselves, would create a system that is complementary to themselves. It is from these reasonings that I have developed the notion that the structure of language has some similarity to the structure of consciousness-in-action. And that it makes some kind of sense to think of conscious operations in terms of grammatical structures. After all, this whole essay would not be possible if I could not think of consciousness as some sort of 'object' (process) that can be referred to, talked about, and studied.

This change in turn affects what we say and do, and how we say what we say and do what we do. This in turn modifies the kind of society we build — the institutions we preserve, the way we raise our children, the values we hold dear, and so on. This dialectic interplay between consciousness and language (and other structures in the

psycho-biological field) provides us with opportunities to learn from our environments, from ourselves, from each other, and from past generations. And since we ourselves will eventually become one of the past generations, through our language records we are also the source of future learnings. Korzybski named this special human selves-reflexive feature *'time-binding'* — or to us a more accurate term, 'times-binding.'

Transitive Features of Consciousness and Language.

To the extent that conscious activities observe and study themselves, and that we can use language to refer to, discuss, study, talk about language, consciousness and language can be classified as both 'selves-reflexive' and 'transitive.' 'Transitiveness' is a logical consequence of selves-reflexiveness. In other words, consciousnesses, in observing and studying themselves, are the 'objects' of their own explorations. This 'transitiveness' is reflected in the structure of language. Language is about something, and refers to something. So we can say that these somethings that language is about, these referents, in a grammatical sense, are the 'objects' of language.

The following sentence is an example of both the selves-reflexive and transitive features of language: "This sentence is composed of nineteen words, and reflects the fact that I feel the notion of selves may not be easily understood or accepted." The sentence starting with the words "This sentence", is 'object' of the sentence.

This factor of 'nesting' — sentences within other sentences, and sentences being 'objects' of other sentences, and awareness that includes memories of other times of awareness — is relatively invariant to conscious activities and language. If you had any difficulty sorting out, or keeping track of what was indicated in the examples, then you have directly experienced a possible source of human confusions, uncertainties, and insecurities — especially in the areas of communicating with ourselves and with others. Words

about words, feelings about feelings, ideas about ideas, beliefs about beliefs, interpretations of interpretations, opinions about opinions, selves interacting with selves — well it is very easy to get disoriented, and lose track of what's going on inside and outside of us.

On the other hand, it is also through knowledge of 'fields,' 'selves-reflexiveness,' 'transitiveness,' 'nesting' and so on, that we can begin to sort things out. For instance, with training and effort, we can increase our skills in recognizing that nested in language are words put together to represent beliefs, knowledge, facts, opinions, meanings,interpretations,speculations,generalizations,observations, descriptions, assumptions, names, dogmas, doctrines, propositions, prescriptions, truths, and so on. And with training and effort, we can increase our differentiating skills and so improve our abilities in not identifying or confusing any one of these with another. Ways to train ourselves include close observations of our interpretations and understandings of what we say, write, read and hear, so that more and more, we recognize when we and others are stating beliefs as if they were facts; giving our personal opinions as if they were public knowledge; making assumptions and presenting them as if they were descriptions of what we ourselves observed; making promises that are beyond our powers to keep; making statements that seem to deny uncertainty; making claims that everything has been taken into account; and so on.

Selves as Object, Subject, Verb, etc.

Words put together according to some grammatical rule to form sentences can be classified as subjects, objects, verbs, adverbs, adjectives, and so on. As you may recall from early lessons in grammar, the 'subject' in a sentence (in simple terms) relates to that which acts or does something; the 'object' is that toward which effort is directed — what is acted on, done to, referred to, etc.; 'verb' is the name given to the word that expresses the action; 'adverb' typically modifies the verb in terms of time, place, manner, etc.;

'adjective' specifies something as different from something else. What I would now like to suggest is that we can also think of conscious activities in terms of subject, object, verb, adverb, adjective and so on.

Near the beginning of this essay, we discussed 'selves' in terms of constellations of conscious activities and neuro-muscular supports. We'll now explore conscious activities as 'subject,' 'object' etc., but at higher levels of integration in terms of 'selves.' But before getting into this, it's time again to remind ourselves that what we are aiming for in our differentiations is increased understandings — but that these understandings are about ourselves as *organisms-as-a-whole. We are differentiating toward more satisfying re-integrating.*

Selves as Subject

When I make a decision, say something, do something, etc. — *with the awareness* that I am the one making the decision, that I am the person in charge, that my actions are expressions of my own values and concerns, that I am saying and doing what I want to say and do, in the given circumstance, that I am not being forced into doing things this or that way, that I am not saying what I am saying or doing what I am doing just because someone wants me to — these are examples of times when I say that my selves are in the mode of 'subject.'

In situations of panic, or when I look back at certain situations and say such things as "I just don't know what got into me", or "I couldn't believe I did that" — those times represent periods of absence of 'selves as subject.'

Selves-reflexiveness, and selves-awareness of selves-reflexiveness, is at a high level of activity in selves active as 'subject.' Much of psycho-therapy is related to helping individuals develop and activitate themselves as 'subjects.' From observing the behaviors of dictators and individuals in ruling positions in totalitarian regimes,

I assume that their main concern is to suppress the development of 'selves as subjects.' 'Selves as subjects' are much more difficult to coerce than 'selves as objects.'

There are times when I feel confident that I am managing a situation well. At other times I am not so confident. My assessment at both times may be far off the mark. But how accurate or inaccurate my assessment may be is not the important thing. **What is more important in terms of 'selves as subject' is this:** Whether I am confident or not, and whether I am accurate in my assessment or not, **I do not lose the feeling that I have some measure of control.** And I do not feel that the situation is managing me, that I am helpless to change the situation, that I have lost all control, etc.

There are times when I recognize that I am restraining a self (myself in usual terms) from saying or doing something — whatever this may happen to be. And there are times when I recognize that I am pushing, forcing, persuading, myself to say or do something. There are times in some situations when I am aware that I just don't know what to say or do — and I feel at a loss. Such times could be considered as examples of 'selves in conflict' — a situation where 'selves as subject' may be poorly developed, are unable to predominate and unable to take charge; a situation usually referred to in terms of "I can't make up my mind". Such situations provide excellent opportunities for developing 'selves as subjects.' For it's mainly through feelings of inadequacy, uncertainty, doubt, incompetence, dissatisfaction, helplessness, and so on (examples of 'selves as adjective'), that 'selves as subject,' with the help of 'selves as adverb,' can be stimulated to grow and become more active in the systems of selves.

In the 'selves as subject' mode, I am looking purposefully, intentionally, and aware that I am doing this; I am not just looking and seeing. Again, in this mode, I am listening purposefully, intentionally, and aware that I am doing this; I am not just listening and hearing. Decision making, purposefullness, intentionality, *and awareness of this*, are interrelated and fundamental features of

'selves as subject.' Of course there is much more that can be said. What has been said so far is a brief outline.

Selves as Object

If we put 'selves as subject' near one end of a 'psycho-grammatical spectrum' (Don't look that up; I just made it up), then 'selves as object' will be positioned nearer the other end. In talking about 'selves as subject,' I specify my actions as being purposefully directed at, toward, something. **In 'selves as object' I am the one acted upon.** (Actually, in terms of the notion of selves, I should say "myselves are the ones being acted on." 'I' should be considered as a collective pronoun. Notice again how difficult it is to introduce a different way of discussing things, and to be conscious of things in a different way, as a result of the traditional and more acceptable way of talking about, and relating to things. Makes me wonder if there are languages which are more flexible, and so facilitate changes in attitudes and behaviors, more than others).

As a set-of-selves-in-environments, we are constantly being bombarded by, acted on, used by, manipulated by, under the direction of other forces, and other selves in our surroundings. But the focus in 'psycho-grammatics' is not in terms of 'selves as objects' in these kinds of situations. The focus has to do with times when I *feel* that I am at the mercy of these forces, times when I *feel* helpless, when I *feel* that I cannot do anything whatsoever to change the situation, times when I *feel* I have no choice, no say — but I am *not aware* that this is a *feeling* about the situation and not necessarily a fact. Sometimes on our own, we discover the *allness* characteristic in this kind of evaluation. At other times this is pointed out to us by friends and acquaintances. Sometimes it's through therapy or counseling that we come to recognize that there are many ways to think, feel, interpret, talk about, and react to experiences and situations. That we can sometimes, on our own, pull ourselves out of these 'no choice' beliefs is another indication

for me that it makes sense to refer to ourselves, in terms of 'selves,' rather than 'self.'

'Selves as object' has to do with times when I feel trapped, times when I feel that I am the victim of circumstances, but I cannot do anything about this state of affairs. 'Selves as object' relate to times when I say such things as, "I couldn't help myself. I was overwhelmed. He/she/they/the devil made me do it." Or when in despair, I ask such questions as "Why is this happening to me. Why is he/she/they doing this to me. Why did you make me do this."

At times when 'selves as object' are active (but not only at those times), we perform with less effectiveness, less efficiency, less spiritedness, less creativity. This is one of the ways that the tone of the whole system hits minimal values — 'hits bottom' as we usually say. As you may suspect, the effects on us when 'selves as object' are active, can sometimes be made less intense, if other selves (especially selves as subject, adverb, adjective, managers, experimenters, and a host of others) come to the rescue. The speediness of our recovery depends, to a great extent, on how well prepared are the other selves, how well developed, how accessible, how well known are the selves to each other, how well they perform as a team and so on.

We do not usually see ourselves as managers, teachers, directors, editors, etc., although from time to time we do perform as such. (An example of 'editing' relates to times when we think about what we will say, how we will say what we say, and whether we will say anything at all — *before we say anything.* I hope by now you have convinced yourselves that there are a vast number, and a wide variety of selves that are available to us, that we are not usually aware of their capabilities or even aware that they exist. They can be called upon to make their particular contributions to the better workings of the whole system.)

Revealing more of ourselves (as individuals) to ourselves (as individuals) is, theoretically, a relatively simple matter. It involves

looking for combinations of similar characteristics (relatively invariant factors) in what we do and what others do. For instance: in doing what we do which we usually label as 'parenting,' do we set goals? Do we make plans? Organize ourselves and our resources? Make important decisions? Take time into account? Make rules? Do budgets? Exercise control? Take disciplinary actions? Delegate duties and responsibilities? Are we concerned with everyone doing their share? Do we try to improve communications? Do we try to avoid conflicts, and work toward harmony? Do we get stressed? This is certainly not managing a bank or a big commercial enterprise. But could you reasonably say that this has nothing to do with *'management?' Or that we have no right to call ourselves 'managers'?*

The relatively narrow and limiting ways we define ourselves and each other (as individuals) influence our behaviors. As we relate to each other in terms of our definitions, we can expect problems to arise as direct consequences of these narrow definitions. The characteristics that we have left out are not destroyed by our definitions. If we defined animals as gentle, harmless, playful creatures, we would expect to run into problems from time to time. People, animals, things do not as a rule conform to definitions.

But let's return to our explorations. When 'selves as object' are active, we are in one of our weakest, loneliest, and most vulnerable modes of being. These are often among the times that selves abuse selves through alcohol and other drugs. 'Selves as object' in advertising provide opportunities for unsympathetic others to treat individuals as 'manipulable objects' rather than 'response-able subjects.' We see evidence of this in many personal, social, political, employer/employee, and other relationships. But this does not happen only in the 'selves as object' mode. Similar situations can arise when we do not recognize and develop the many dimensions of beings that we happen to be.

We should not, despite all this, consider 'selves as object' completely in negative terms. 'Selves as objects' can trigger off alarms to other

selves that more needs to be done, that more effort should be applied, that information and interpretations need reviewing and updating, that expectations are not being met, and so on.

Selves as Verb

'Selves as verb' relate to all our activities. This includes **those we are aware of**, as being purposeful and intentional, **and those we are not aware of** in those terms. Obviously, we are at all times, asleep or awake, functioning on automatic in the 'verb' mode. In writing this essay, I am most times not aware of writing, thinking, composing, editing, how I am sitting, occasional noises, and so on. And that's a good thing — I would not be able to do much if I was constantly observing what I was doing. But every now and again an awareness that I am so involved emerges. That this second order awareness can be developed to become part of the automatic mode of 'selves as verb,' is very important to know about. In situations where we are striving for excellence, incorporating selves-awareness, and selves-correction, as automatic activities, can be very helpful. With practice you will find it quite an experience when this special 'selves as verb' mode clicks in on its own.

Selves as 'Adverb'

Our behaviors are constantly being modified by others, by things we encounter, things we see, hear, read, and so on. But 'selves as adverb' is not about these kinds of modifications. **'Selves as adverb' relates to the intentional, goal oriented, modifications of our behaviors.** 'Selves as adverb' should always be considered as operating in especially close relationships with 'selves as subject' and 'selves as adjective.' ('Selves as adjective' in recognizing what, and how we are doing; and 'selves as subject' in deciding what it is we want to accomplish, what directions we want to take, where we want to go and so on).

'Selves as adverb' relates not just to selves changing behaviors, but selves changing behaviors purposefully, intentionally, selves-consciously. When 'selves as adverb' are active, I am not just saying or doing something; I am saying or doing whatever it may be in a particular way — knowing that I am doing this — and with a specific goal in mind. 'Selves as adverb' could be described as being at the core of our creative selves. This is the mode we are in when we do things with a certain style, with a certain flair, and we know that we are doing so. In the 'selves as adverb' mode, we are in a selves-directing-selves-modulating-selves-correcting-selves-managing,goal-oriented, mode of being. We are doing what we want, the way we want, for our own reasons. And we are aware of this. 'Selves as adverb' rely on high levels of corrective and intensifying feedback activities. In teaching ourselves to do something, or learning to do something, calling on these selves can do much to accelerate progress.

Selves as 'Adjective'

When I think of 'selves as adverb' the word 'how' comes to my attention. But when I think of 'selves as adjective,' the word 'that' comes to my attention. 'Selves as adjective' describes times when we are being discriminative, when we are making distinctions, when we are being analytical; times when we are making plans, talking, listening, making decisions, doing things; times when we say we feel good; times when we say we don't feel so good; times when we are being critical and judgmental; times when we are showing appreciation; times when we are noticing things, and so on. But unlike 'selves as verb,' 'selves as adjective' do not label our experiences or label things. You could think of 'selves as adjective' as observers — silent witnesses to the activities of any of the other selves. **'Selves as adjective' simply notice whatever comes to their attention.**

Many of our behaviors are habitual and automatic. Before we can intentionally do something differently, make improvements, we must

first be *aware that* we are doing something. If we are acting in a way that we would label as 'being impatient' or 'anxious' or 'inconsiderate,' we *have to recognize* this before we can behave differently. In 'selves as adjective' mode, we do what we do *recognizing that* we are doing this particular thing — whatever we may choose to call it. And we do what we do in a certain way, *with an awareness that* we are doing it this way.

'Selves as adjective' do not criticize, judge, interpret, analyze, make plans, ask questions, look for answers, seek solutions, try to understand, dismiss or reject, seek to make changes, like or dislike what they encounter, and so on. 'Selves as adjective' simply report to the rest of the crew, whatever it may be that comes to their attention.

To get a feel of what I am attempting to describe, I invite you to do the following exercises. (By the way, these are also training exercises for developing 'selves as adjective.') Look around you, wherever you happen to be, and **without giving names, notice the different things you see.** Then notice the different sounds that come to your attention, without trying to figure out what could be making such sounds. Then choose a particular object, to take a closer look. (**The choosing, is not** a 'selves as adjective' function — it is part of the exercise. **Noticing that** you have chosen, or that you are choosing, is). Then closely examine this object by looking, stroking, touching and so on. (Again, the examination is the exercise. It is not a 'selves as adjective' function. **Noticing what** you become aware of through this closer look, noticing the different textures, and so on, is.) You can do similar exercises with the sounds you hear.

It is easy to see from all this (I imagine), that 'selves as adjective' in their functioning, provide links, and keep us in touch with our inner and outer environments. Obviously, the more developed are our 'selves as adjective,' the more extensional we are being, the more features, the more in touch, the better maps, the more updated maps we will have, of our-selves-in-thought-and-action-in-our environments. It may seem that well developed 'selves as adjective'

may simply overload us with information. I suggest that this is not necessarily so. Higher levels of differentiation can often lead to high levels of integration. As 'selves as adjective' notice differences, they cannot help but also notice similarities.

A Sense of Our Selves

If you are still with me, we have adopted *generalized calculus* as a psycho-logical tool. This is based on an assumption that one way to understand complex processes is to look at the interactions of their simpler components. We have been supplying generalized calculus in attempting to understand more about language structures and consciousness structures, more about the interactions between language and conscious activities, how conscious activities create language, and how language modifies and extends conscious activities. We have been exploring the notion that as individuals, we are constellations of selves. And we have been exploring the possible constitution of these selves.

The brief outline of 'selves as subject, adverb,' etc., is just that. With practice you will discover on your own much more about your selves, and maybe come up with some other scheme, some other map, some other story. This is a way to develop your executive-selves, the organizing-coordinating-overseeing-selves-management-selves. These are the selves that know about, and are able to train and develop, any of the vast number and variety of selves that make us up.

When we think of myths, we usually think of so-called primitive societies and their world views and practices. We do not usually think of ourselves and our generation as myth makers and followers of myths. We, of a present generation, habitually leave it to those of future generations to recognize and formulate our myths. But with careful observations, analysis, and evaluation of the ways we think about ourselves, and the things we do to ourselves, and to each other, and the kinds of psycho-biological fields we have

created, we could discover some of the myths that direct and modulate the ways we interact with ourselves and with each other. I think that you will agree with me, that to improve ourselves in any area (however we define 'improvement') is a matter of applying our selves-reflexive capabilities to the job... and then to see what happens... and go on from there to apply our selves-reflexive capabilities... and to go on from there to apply...

[Editor's Note: This chapter represents a summary of a longer, more inclusive paper. If you wish a copy of the longer paper, write Milton Dawes, 3415 Girouard #1010, Montreal H4A 3C6, Canada]

Milton Dawes was born and educated (Cornwall College and the University of West Indies) in Jamaica, becoming a medical technologist, musician, dancer, and a member of the Jamaica Pistol Team. That last role took him to Canada where he has been living since 1968. In his own workshops and the summer seminar-workshops of the Institute since 1978, he has developed a unique approach, combining lecture-demonstrations, music, dance, and group interaction. Two of his articles have appeared in the *General Semantics Bulletin.*

One of the most tantalizing truths we know is that there is so much we may never know.... We simply cannot overtake the coy horizons of the sea of unawareness that surround our modest island of perception.

Wendell Johnson
Your Most Enchanted Listener

ANNOTATED LIST OF SOME RECOMMENDED BOOKS

JEREMY KLEIN

[IGS] = Reprinted by the Institute of General Semantics

[ISGS] = Reprinted by the International Society for General Semantics

Berman, Sanford I. *Words, Meanings and People.* San Francisco: International Society for General Semantics, 1982.

Brief essays that examine "the fundamental building blocks we use to shape thoughts about ourselves and our world: our conscious and unconscious assumptions." Originally appeared as newspaper columns.

Bois, J. Samuel. *Explorations in Awareness.* New York: Harper and Brothers, 1957. [ISGS]

----------. *The Art of Awareness.* Dubuque, IA: William C. Brown publishers, 1966; Third Edition. 1978.

Readable introductions to general semantics. The latter work attempts to expand the system by incorporating transactional and general systems models.

Ellis, Albert and Harper, Robert. *A New Guide to Rational Living.* North Hollywood, Ca: Wilshire Book Company, 1975.

An introduction to Rational Emotive Therapy, a cognitive approach to psychotherapy influenced by general semantics. The first book available in an E-Prime translation.

Gardner, Howard. *The Mind's New Science.* New York: Basic Books, 1985.

Layperson's guide to Cognitive Science, the emerging discipline that integrates such fields as linguistics, epistemology, neuroscience, artificial intelligence, and cultural anthropology in an attempt to create a general, workable theory of mind. Interesting parallels to the development of general semantics.

Hayakawa, S. I. with Alan Hayakawa. *Language in Thought and Action.* New York: Harcourt Brace Jovanovich, 1949; Fifth Edition 1990.

College text that has probably exposed more people to aspects of general semantics than any other work. Hayakawa emphasizes the social nature of language and suggests that there exist important functions for affective language. For example, 'scientifically true' language might be inappropriate in a poem.

Johnson, Kenneth G. *General Semantics: An Outline Survey.* San Francisco: International Society for General Semantics, 1972.

Tightly organized yet readable summary that can serve as either an introduction or review.

----------, Editor. *Research Designs in General Semantics.* New York: Gordon and Breach Science Publishers, 1974.

The proceedings of a multidisciplinary conference. Demonstrates the applicability of general semantics-based methodologies to many scholarly and scientific areas.

Johnson, Wendell. *People in Quandaries: The Semantics of Personal Adjustment.* New York: Harper and Brothers, 1946. [ISGS]

Deals with many forms of unhappiness ranging from mild disappointment to severe mental maladjustment. Johnson suggests their amelioration may result from becoming aware of their neurolinguistic origins.

Korzybski, Alfred. *Manhood of Humanity.* Lakeville, CT: The International Non-Aristotelian Library Publishing Company, 1921; Second Edition 1950. [IGS]

Korzybski's "new functional definition of humans as a time-binding class of Life" and its implications.

----------. *Science and Sanity: An Introduction to Non-Aristotelian Systems and General Semantics.* Lakeville, CT: The International Non-Aristotelian Library Publishing Co., 1933; Fourth Edition 1958. [IGS]

Wordy, technical, argumentative, yet *Science and Sanity* remains the fundamental, irreplaceable exposition of general semantics. In this work Korzybski developed important lines of thought neglected by subsequent authors.

----------. *Selections from Science and Sanity.* The International Non-Aristotelian Library Publishing Co., 1948. [IGS]

An abridgment that eliminates the more technical sections while preserving the central ideas.

Langacker, Ronald. *Foundations of Cognitive Grammar: Theoretical Prerequisites.* Stanford: Stanford University Press, 1987.

Pathbreaking work that reasserts the importance of *meaning* for an understanding of grammatical categories and syntax. Perhaps the most important of recent works challenging the dominant generative model.

Lee, Irving J. *Language Habits in Human Affairs.* New York: Harper and Brothers, 1941.

An early popularization of general semantics that had Korzybski's endorsement — he wrote the foreword. Lee's presentation is made memorable by his inclusion of many vivid examples and pointed quotations.

----------, Editor. *The Language of Wisdom and Folly: Background Readings in Semantics.* New York: Harper and Brothers, 1949. [ISGS]

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